Trains

FEBRUARY
1943

25¢

Truman Blasingame, P. O. Box 178, Augusta, Ga.

On the Southern Railway.

Six miles east of Augusta, Ga., is Bath, S. C., where this Southern passenger train makes a stop before proceeding to Columbia, Charlotte, and the East. The Southern Railway System includes, besides the Southern Railway itself, the Cincinnati, New Orleans & Texas Pacific, the Alabama Great Southern, the New Orleans & Northeastern, and the Georgia Southern & Florida, and spreads for 7810 miles over southeastern United States.

The covers.

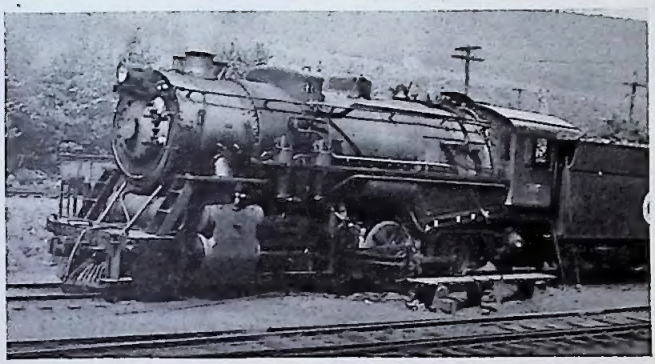
Blasting its way up a short grade near Branchville, N. J., Lehigh & New England No. 304 put on a real show for photographer Donald W. Furler, 94 W. Main St., Glen Rock, N. J., and the result is our front cover picture this month. L&NE 307 is shown on page 3. On the rear cover, trainmen of a Milwaukee Road way-freight watch a northbound *Hiawatha* from a siding north of Glenview, Ill.

The Trains *Competition.*

To encourage more scholarly and more accurate research on railroads, TRAINS is sponsoring a competition with $200 or more in cash awards for the best manuscripts on the railroads of various states or regions. The winning manuscripts will be presented in future issues. A writer may cover, for his entry, the railroads of his home state, or of some other favorite state, or the railroads of some particular region.

The way is wide open for individual methods of organization and presentation, but we do suggest that the winner will most likely be on the informal side in literary style, use plenty of first-hand impressions, and will most certainly be highly accurate and complete with his facts. Rules:

1. The awards will be: First award, $100; second award, $50; third award, $25; and as many additional awards of $15 each as the judges deem worthy.
2. Manuscripts, entitled "The Railroads of _____ [any state or other geographical region]," are to be from 3000 to 8000 words, exclusive of pictures, picture captions, lists and map data.
3. Manuscripts must be typewritten on 8½" x 11" unlined paper and double spaced. Use only one side of the paper.
4. Manuscripts will be judged on completeness and accuracy of information, literary style, organization of material, photographic illustrations and supplemental material which will assist in interesting presentation of the article. Entries submitted without accompanying photographs will be given full consideration.
5. All entries earning cash awards will become the property of Kalmbach Publishing Co. Valuable photographs, maps, etc., receiving awards will be returned only after use and if specifically requested. Return postage should be included in every case. The publisher cannot be responsible for safe return of entries.
6. Entries must be addressed: Competition Editor, TRAINS Magazine, 1027 N. Seventh Street, Milwaukee, Wis. Do not include with your entry subscription orders or any correspondence not pertaining to the competition.
7. All entries must be postmarked by midnight, May 2, 1943. Every attempt will be made to announce winners in the July, 1943, issue of TRAINS.
8. Employees of the Kalmbach Publishing Co. and their families are not eligible.
9. Judges: Editors of TRAINS and Dean Jerry O'Sullivan, School of Journalism, Marquette University.



Trains

Editors: A. C. Kalmbach, Linn H. Westcott, Willard V. Anderson

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Masthead photo by William C. Moore, 27 Norwood Rd., West Hartford, Conn. See "The covers," page 2.

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The Man in the Tower

BY EDWARD HUNGERFORD.

RECENTLY the Man drifted away from the Tower for a week or more and went to Washington, which at just this moment is perhaps one of the most strenuous and hectic places in the world. A field of battle hardly could be more exciting. But the railroaders in and around the national capital are taking it very much in their stride. . . . To accommodate the vital tidal wave of travel in what is now not merely the nation's but the world capital, Washington Union Station not only has been reorganized but has been considerably rebuilt. [January TRAINS.] Fortunately, the late D. H. Burnham planned the station in a monumental way, upon a monumental site, approached from many directions. In fact, so vastly monumental is it that during the recent Depression there were days when it looked more like a tomb than a monument. . . . The great concourse, in which it is said 25,000 human beings can be accommodated at one time, looked pretty deserted with only 25 lost souls wandering around it and glancing through the iron fence at the handsome trains lined up beyond it.

That is better than they might ever do in St. Louis Union Station, which has more of the gaily colored trains coming into it than even Washington—trains whose outward appearance alone has cost their owner railroads many thousands of dollars—and yet which, in their most important terminal, are carefully hidden from vulgar public gaze by a high fence of solid sheet-iron all the way along the great concourse of the station. A clever advertising stunt! I would suggest that here might be a highly practical contribution to the scrap-iron movement—and one that would be very greatly appreciated by the traveling public. People *like* to see trains!

But we are talking of Washington Station, not St. Louis—of the station through which today passes by far the greatest through passenger travel of any terminal in the world. (The commuter business is negligible.) Every one of the six railroads that share it and own it has been hard put to it by the wartime increase of travel upon its line. And Washington Station is the hub of all of them—the vortex of the traffic floods. Everything within it has been keyed to the war effort. Where 25 women formerly were sufficient to handle Pullman reservations, now more than 100 are employed for that purpose. Ticket windows have been increased from 18 to 65. Two thousand locker-boxes have been set aside for the temporary checking of luggage. Five thousand people a day eat in its restaurants. . . . The somewhat snooty Presidential Suite, formerly reserved almost exclusively for the arrival and departure of the Chief Executive—as well as his distinguished visitors from afar—has, for the moment, gained new caste as a U. S. O. lounge for men of the armed forces, some sixty or seventy thousand of whom are using it each month these piping days.

A SECOND great show the Tower man got out of Washington.

The Pennsylvania Railroad has a main stem reaching down to it from New York that today is the busiest railroad in the United States —probably the busiest railroad in the world. It is fantastic in its realities. . . . Eight or ten years ago the Pennsylvania extended its electrically equipped lines from New York and Philadelphia on to Harrisburg and down to Washington, at no small expense. Some of the wiseacres criticized the road very much for this expenditure. They argued that steam locomotives could handle the job—certainly Diesels, which the Pennsy has been in no hurry to adopt. . . . The road ignored these criticisms. Its far-seeing president, the late W. W. Atterbury, went ahead with the improvement. With it went the building of an elaborate new main passenger station on the west side of the Schuylkill River in Philadelphia, the digging of a new tunnel east of the Union Station in Baltimore, the construction of a double-track bridge across the mouth of the Susquehanna at Havre-de-Grace, and a good deal of new multiple mainline track. . . . It all was figured out very carefully. In addition to its heavy freight business, the line was adjusted to an average flow of 30,000 passengers a day between Philadelphia and Washington—much higher, of course, north and east of Philadelphia, where the main line from the West comes in.

General Atterbury figured more wisely than he was to live to realize. A decade ago he builded for a morrow that came far more quickly than anyone anticipated.

LAST December the Towerman rode from Washington up to New York on the road's historic *Congressional Limited*, scheduled to make the 225-mile trip, with stops, in 3 hours 35 minutes. It did it that day in 14 minutes less. The Towerman had a seat at the rear of the first, or advance, section of the train which gave him the opportunity to see one of the most remarkable railroad performances that has ever been his privilege to witness.

We were out of Washington Station on the minute of 4, and into the Pennsylvania Station in New York at just 7:21 p. m. Being an advance section, we were privileged to cut out stops. Three of the busiest and most time-taking of the lot—Wilmington, Philadelphia, and North Philadelphia—were omitted. On the other hand, we were slowed twice by other traffic. And there was a time-taking stop of four minutes at Newark. If it had not been for these I think that we would have made the run in three hours flat—a tremendous performance for a road which, until a few years ago, had a 4½-hour minimum schedule for it. . . . There was a speedometer close beside me and it was fascinating to watch its needle. Most of the time we ran in excess of 80 miles an hour; there were stretches when that needle climbed to 97. Yet, on a track laid for almost its entire length with 152-pound rail and magnificently ballasted in stone, every mile of it, there was little or no vibration

or sway—even at the end of a 16-car train.

But it was not the speed of the operation that impressed me as much as did its density. My companion and I counted in that three-hour run not less than 64 southbound passenger trains. There was an average of a passenger train every three minutes, and most of them were very long trains too—southbound *Congressionals* . . . gaily colored trains bound for Florida and elsewhere in the Far South . . . the *Broadway* . . . the *General* . . . the *Admiral* . . . still others bound for the Pennsylvania's main line to the West and Southwest, which, for 86 miles between New York and North Philadelphia, shares with the Washington line four tremendously vibrant and busy tracks.

At the outset, I noted the theoretical rated passenger-carrying capacity of this stretch of railroad between Washington and Philadelphia—30,000 passengers a day. . . . Thirty thousand a day, which was doubled the day Franklin D. Roosevelt last was inaugurated President of the United States. On that 66,000-day, the Pennsylvania's operating people prided themselves a good deal. A vast crowd was hauled to the inaugural and back, without accident or serious delay. Yet in April, 1942, that exceptional one-day holiday business began to be exceeded, day after day. In almost monotonous regularity, the daily average for that month rose to 76,000. June beat it, with 84,000. . . . August had 96,000, September 98,000 . . . and in the month that this is being written (December, 1942) the daily average is rising to over 100,000 passengers a day!

For the most part, passengers find seats. The heaviest pressure is upon the Pullmans. There come days and trains when even coach-seating capacity is taxed—and occasionally passengers stand for a portion of the run, if not all of it. But these are the exceptions. For the most part the Maryland Division of the Pennsylvania stands magnificently to its exceptional job. Its long trains move with the regularity and precision of high-speed trolleys in a big city. Once, when there was a small bridge job to be done, the operating officers of the division sought the longest possible time between trains to do it. They found it—8½ minutes!

No one even pretends now that steam locomotives or Diesels could do the trick. Some of the connecting roads to the south of Washington run Diesel-operated trains and make much of the fact. But when one of these comes into the low level of Washington Union Station, its locomotive is quickly detached and the train is placed behind one of the Pennsy's long red electric trains bound to the North, which handles it as if it were no more than an added coach or two. On the trip south, the process is reversed. Added Diesel trains are just small potatoes to the road's giant electric locomotives—hauling 18 to 20 cars at sustained speeds of 80 to 90 miles an hour.

Edward Hungerford

GG-1 No. 4878 speeds toward Philadelphia on the Pennsy's electrified line from New York. This photo was taken as Iselin, N. J.

Herbert Weisberger, 8798 21st Ave., Brooklyn, N. Y.

What's In a Name?

★ "Frisco Lines" miss San Francisco by a thousand miles, but connect St. Louis with Florida!

By H. P. Scott.

THERE is interest and beauty and even some romance in the names of railroads. My earliest recollection of this fascinating subject was at the age of eight, when I perched on the stile over the board fence across the back of grandfather's yard and watched the fussy little switch engines chuff lazily up and down through the west Madison yards of the "St. Paul" Road (we call it the Milwaukee Road nowadays). After some disappointment in finding that what was apparently a train never got anywhere but just moved back and forth, there came the startling discovery that box cars had different names on them and these apparently indicated that there were other railroads than the "St. Paul." With all of a good collector's enthusiasm, I started a special book of railroad names, and the subject is still interesting although it is some time since I've been eight years old.

Suppose we browse through the fat and pudgy volume which is the *Official Railroad Guide* and, like the bear going over the mountain, see what we can see.

Here is the Ahnapee & Western, now the Green Bay & Western. Algoma, which was formerly called Ahnapee, is the eastern terminus of the road. The GB&W is a prosperous little pike which picks up freight coming west by car ferry over Lake Michigan and hauls it across Wisconsin to meet the Burlington and the Milwaukee Road, the Chicago Great Western and the Chicago & North Western at Winona, Minn. No heavy grades, no streamliners, no impressive motive power, largely unsung to fame—but a Class 1 road, if you please, with a gross income of about two million dollars a year.

Now let's swing to the other end of the alphabet and take a quick look at the Yazoo & Mississippi Valley, which is owned by the Illinois Central. The Yazoo River, with its euphonious but undependable companion, the Yalabusha, and numerous other streams, makes its way into the Mississippi, and back when railroads were very scarce formed an important highway for cotton. Gradually one short railroad after another was built from the river 20 or 30 miles into the back-country plantations, and for a time these little cotton railroads existed as separate entities with affectionate names such as the Pea Vine and the Yellow Dog. When I visited in that country I was solemnly told that there had been one length of rail missing in the Pea Vine for many years, and that when a train came to that point the crew carefully took a rail from behind the train, filled it in in front and went merrily on the way. However that may be, the "Whan'emvee," to give the correct Mississippi pronunciation, was built north and south paralleling the Mississippi and tying together all of the little cotton railroads. Later on it provided a useful extension for the IC in building a through route to New Orleans.

As a matter of fact, Illinois Central itself is an interesting name in that it is typical of many a railroad which has outgrown its original plan. The Illinois Central has a great deal more mileage outside of Illinois than in the state, and there was a time

when the name seemed so inadequate that definite plans were made to provide a more fitting designation. The road was to be called, and appropriately so, the Chicago, St. Louis & New Orleans, but apparently there was too much valuable good will in the old name and the change was abandoned.

While we're on the Central theme, it might be interesting to note how popular this idea has been in railway nomenclature: New York Central, Michigan Central, Maine Central, Alabama Central, Mississippi Central, and with slight change Central of Vermont, Central of Georgia, Central of New Jersey, and even the long-since-departed Wisconsin Central, which provided the Soo Line with an outlet to Chicago.

Which might remind us that "Chicago" is probably the most popular word for use in a railroad name, for the *Guide* lists 26 railroads starting with this useful word and a number of others which have the name somewhere in the picture, such as the New York, Chicago & St. Louis.

The NYC&StL, by the way, is one of many railroads which has a nickname, in this case the Nickel Plate, and you may have heard the somewhat apocryphal story of its origin. It seems that at a time when the road was in rather sad financial straits and Cornelius Vanderbilt was asked to buy it, he stated that he "wouldn't buy the damn road if it were nickel plated." Whether the story is true or not, the Nickel Plate did eventually become part of the New York Central properties.

Soo Line is not only a convenient abbreviation for Minneapolis, St. Paul & Sault Sainte

Atlantic Coast Line is just that.

Although it deviates from the coast as far west as Montgomery, Ala., the ACL adheres quite well to its title. Here No. 2009 leaves Montgomery to battle stiff grades southeast to Dotham.

Joseph P. Sadler, 1723 S. Court St., Montgomery, Ala.

Marie, but is an anglicized or phonetic spelling of the French word for "rapids."

Then there are the railroads which started out bravely and with high aspirations but met a far different destiny. The St. Louis & San Francisco, for example, never got within 1000 miles of San Francisco and yet staunchly carries the Frisco herald down across Missouri and Arkansas, Oklahoma, Mississippi and Alabama, to end up with a flourish at Pensacola, Fla.

Conversely, the Chicago, Burlington & Quincy started out as a modest little road which wandered quietly down through Illinois but developed into a Burlington Route covering 12,000 miles in 14 different states.

Again, the Louisville & Nashville spread far beyond the confines of its name to St. Louis and Cincinnati, to Atlanta and Memphis, and reaches a long arm down across the salt marshes to New Orleans. And by the way, one of the strangest sights to meet the eye of a railfan furtively driving the family chariot east from Lake Ponchartrain is an apparently sea-going railroad winding off in the distance along mile after mile of trestle across a landscape dotted only with occasional fishing boats.

While we are in this part of the country we should recall memories of the romantic "Queen & Crescent" (officially the Cincinnati, New Orleans & Texas Pacific); the romance originated in that fact that Cincinnati was euphemistically called the Queen City and New Orleans on the curving bank of the Mississippi was the City of the Crescent. The Queen & Crescent, like many another road, never reached its goal, and was eventually swallowed up by the Southern.

Wandering over to the Atlantic Coast, we pass what should be the simplest of all railroad names, the AB&C. The Atlanta, Birmingham & Coast Railroad is not very big and not very long, but it does form a strategic link between Atlanta and Waycross on a through route from Chicago to Miami.

Waycross brings us to the Atlantic Coast Line, which title is a clear and specific indication of the territory which the road serves. Paralleling the ACL through much of the southeast is the Seaboard Air Line [now Seaboard Railway] with its strong bid for New-York-to-Florida traffic, and a name which resulted in heavy purchases of stock at the time that one Charles Lindbergh flew across the ocean and aviation received a big boost in popular fancy!

Traveling north we find it difficult to miss the Richmond, Fredericksburg & Potomac, which lives very strictly up to its name and is simply a double-track channel between Richmond and Washington, but a vitally important steel highway through which passes a large portion of the north-and-south traffic.

Now suppose we swing far to the west and observe the many railroad names which carry the thrill of our pioneering drive to the coast: Southern Pacific, Union Pacific, Western Pacific, Northern Pacific, Chicago, Milwaukee, St. Paul & Pacific, Missouri Pacific, to say nothing of the little roads such as Canadian National's Duluth, Winnipeg & Pacific, which will never get anywhere near salt water.

Speaking of Canadian National, it is a good lesson in humility for us to realize that whereas the United States has no railroad which extends from coast to coast, our Canadian friends have two stretching over a vast mileage to the north of us: the CN, which is owned and operated by the government, and its strong competitor, the Canadian Pacific. Board a CPR train at Vancouver and ride 2884 miles to Montreal; you have already gone within 113 miles of the distance from Seattle to New York City (via Great Northern, North Western, and Pennsylvania) and you can still go 481 miles east to Halifax—3365 miles all on one railroad! It is too bad the name is already used by a chain of grocery stores, for the Great Atlantic & Pacific would certainly fit the CPR.

For contrast let's look at a railroad which is only 8.9 miles long, which runs trains only in the Summer and which is so slow that it takes 1 hour 20 minutes to travel the distance. However, this is a very respectable and interesting line, for the "Cog Wheel Route," otherwise known as the Manitou & Pike's Peak Railway, has an average grade of about 16 per cent.

Interesting names with romantic possibilities shine out from each page of the stolid *Official Guide of the Railways.* Try the International Railways of Central America or the Ferrocarriles Nacionales De Mexico, the Black Mountain Railway, the Due West Railway, the Clinchfield or Lackawanna, the Rutland or Trona, the Wabash or the Yadkin.

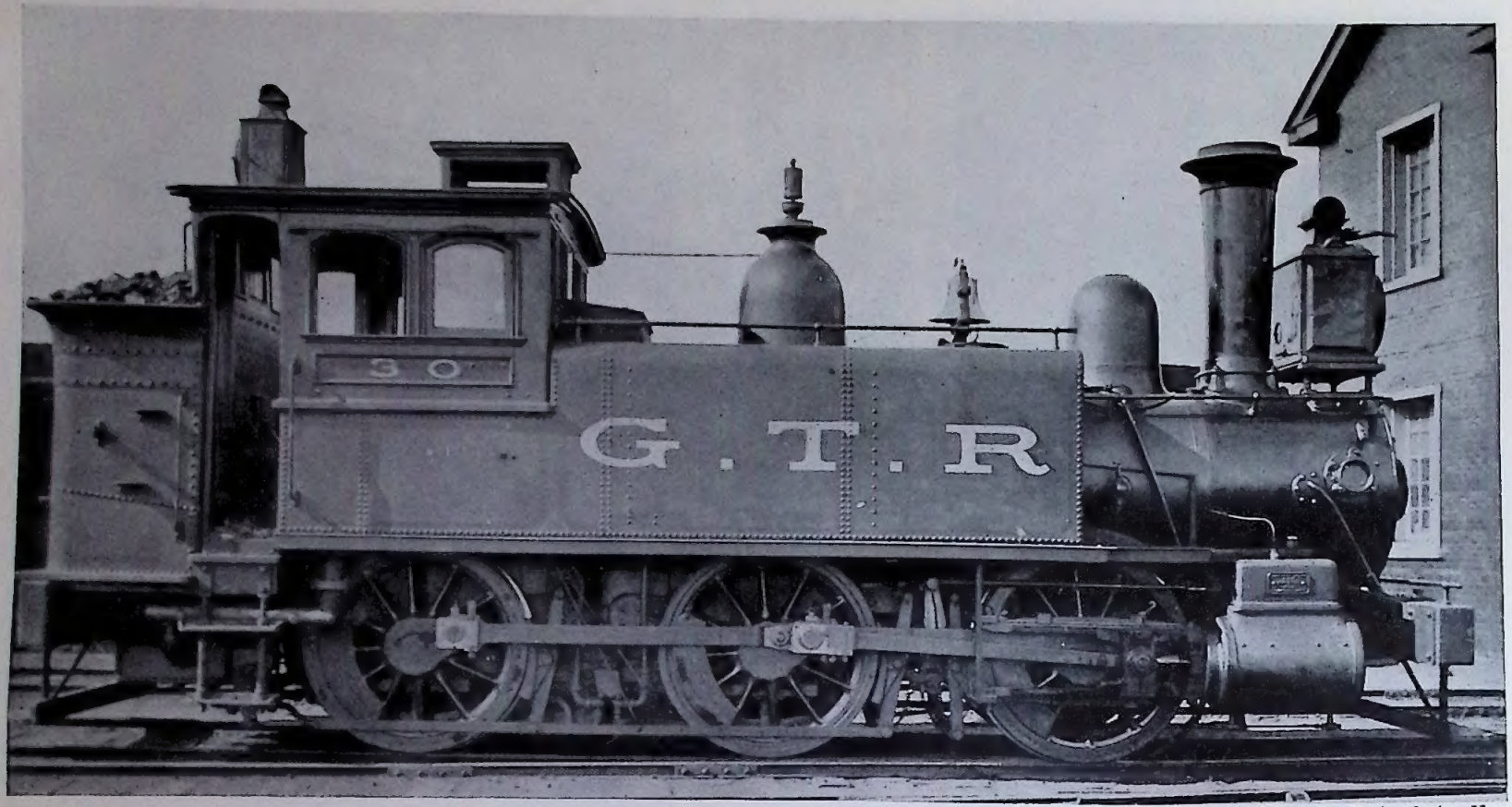
There is interest and beauty and romance in the names of railroads.

J. C. Thode, 2251 Forest St., Denver, Colo.

Manitou & Pike's Peak is well named; not so, the Illinois Central.

The "Cog Wheel Route" runs only between Manitou and Summit, at the top of Pike's Peak, Colo., taking 80 minutes for the up trip and 70 minutes for the return, 8.9 miles each way. The Illinois Central covers 6778 miles in 14 states: as far north as Madison, Wis., east to Louisville, Ky., south to New Orleans, and west to Sioux Falls, S. D. Photo shows the *Daylight* leaving Central Station, Chicago, on a Winter day in 1940. At top of page, a special train chartered by the Rocky Mountain Railroad Club waits at Summit while the excursionists enjoy the view. The locomotive is No. 6, 0-4-0T. Locomotives invariably run at the lower end of Pike's Peak trains to prevent runaway coaches.

Robert McKell, 187 W. 2nd St., Chillicothe, O.



Collection of Arthur Curran, 16 Ballard St., Newton Center, Mass.

Engines by Herbert Wallis

★ Early Grand Trunk mechanical superintendent favored smooth boiler mountings.

By Arthur Curran.

MANY years ago a gentleman with a bald head and a Van Dyke beard—a gentleman who looked more like a physician or a Shakespearean scholar than a railroad man—was mechanical superintendent of the Grand Trunk Railway of Canada. His name was Herbert Wallis, and he held the position from 1873 to 1896.

Wallis assumed office in the year that the Grand Trunk was converted from broad to standard gauge, and the road needed new engines in a hurry. Of the 161 which Wallis ordered, 61 came from the Manchester Works. To what extent he liked these engines is not on record, beyond the fact that he fancied the style of cab then applied to Manchester engines. This is proved by his use of this design on his own engines when he got around to building them, which was very soon.

He favored the American (4-4-0) type for passenger service and the Mogul (2-6-0) type for freight service, both with a straight boiler having the dome located as near center as the other mountings would permit. His driving-wheel centers for passenger engines were especially neat, as were the very graceful crescent-shaped counterbalance weights. Wallis' engines were not notable for size, but for his characteristics, among which was his early use of smooth boiler mountings. Tenders were nicely proportioned to the engines for which they were built.

His design for general passenger service is exemplified by No. 416, below, which had 17" x 24" cylinders, 66" drivers, and weight of about 70,000 pounds. For express trains the design was similar, but longer, with 73½" drivers and the other dimensions in proportion. Cylinders were 18" x 24". On at least one of his express engines he applied a very ingenious design of clasp driver-brake. As this locomotive was built half a century ago, the brake was a very early example of its kind.

Wallis' switcher design is illustrated by No. 30, above, an 0-6-0 tank engine with 18" x 22" cylinders and 57" drivers.

His early engines had a boiler pressure of 145 pounds, but later ones had higher pressures.

In those days the Grand Trunk had a variety of passenger rolling-stock fitted with the Miller hook. This was not as good as the pocket coupler, which came later, but was a big improvement over the link-and-pin man-killers of the not-so-good old days.

Arthur Curran collection.

They Were N

★ Some were like the L-1 below;
in all there were 58 engines destined for the torch, but
New Haven rebuilt them with parts cut from old scrap and saved them

Southward to New Haven, near New Hackensack, N. Y., on the Poughkeepsie Bridge line of the NYNH&H.

ot Scrapped

for wartime traffic.

Donald W. Furler, 94 W. Main St., Glen Rock, N. J.

"PUTTING new life into the old iron horse" is the theme of the intensive reclamation program which the New Haven Railroad has been conducting at its locomotive repair shops during the past year. As a result, 58 steam locomotives which were destined for the scrap pile have been saved and restored to active service.

Reclamation work has made available vitally needed locomotives at about one-third the cost, in one-third the time, and by the use of less than one-third the critical materials necessary for new locomotives.

Ordinarily when there was no use for an old locomotive which had run out its mileage, it was held in storage and drawn on for parts to repair other locomotives. Ultimately the usable types were repaired and replaced in service. But those which had been stripped of all usable parts were consigned to the scrap heap.

However, because of the demand for locomotives to handle the unprecedented increase in railroad traffic, some of those which definitely were headed for the scrap pile have been reclaimed and completely reconditioned.

With the exception only of constructing new boilers, all phases of this reclamation work are performed at enormous shops which cover more than 100 acres. The secret behind the success of the reclamation program is the ability of management and employees alike to "do more and more with less and less."

Today many of these rebuilt locomotives are hauling heavy freight trains laden with war materials; others are assigned to suburban passenger trains, while still others are in switching service. Those locomotives, which had been out of service from one to ten years, today are shouldering their full load of wartime traffic.

The reconditioned locomotives range from Class T-2a switchers of 0-6-0 construction, weighing from 219,000 to 239,700 pounds, to such rail monarchs as those of Class L-1, heavy freight locomotives of 2-10-2 construction, weighing 562,735 pounds.

Class 3 repairs were performed on 46 locomotives, Class 2 repairs on eight, Class 1 on two J-1 type locomotives, and only light repairs on two of the A-1a class.

Work on the two J-1 type locomotives, of 2-8-2 construction and used in heavy freight or humpyard switching, entailed the installation of two new boilers in place of the McClellan boilers with which the locomotives originally were equipped. The new boilers were purchased from an outside source. But the installation of them, and all the work and material involved in the rest of this rebuilding job, were performed and obtained at the New Haven's own shops.

Built by American Locomotive Company in 1916, these two locomotives had been out of service for nine years. Each had 25" x 30" cylinders, 200 pounds pressure per square inch, tractive effort of 50,600 pounds, and a total weight of 442,900 pounds.

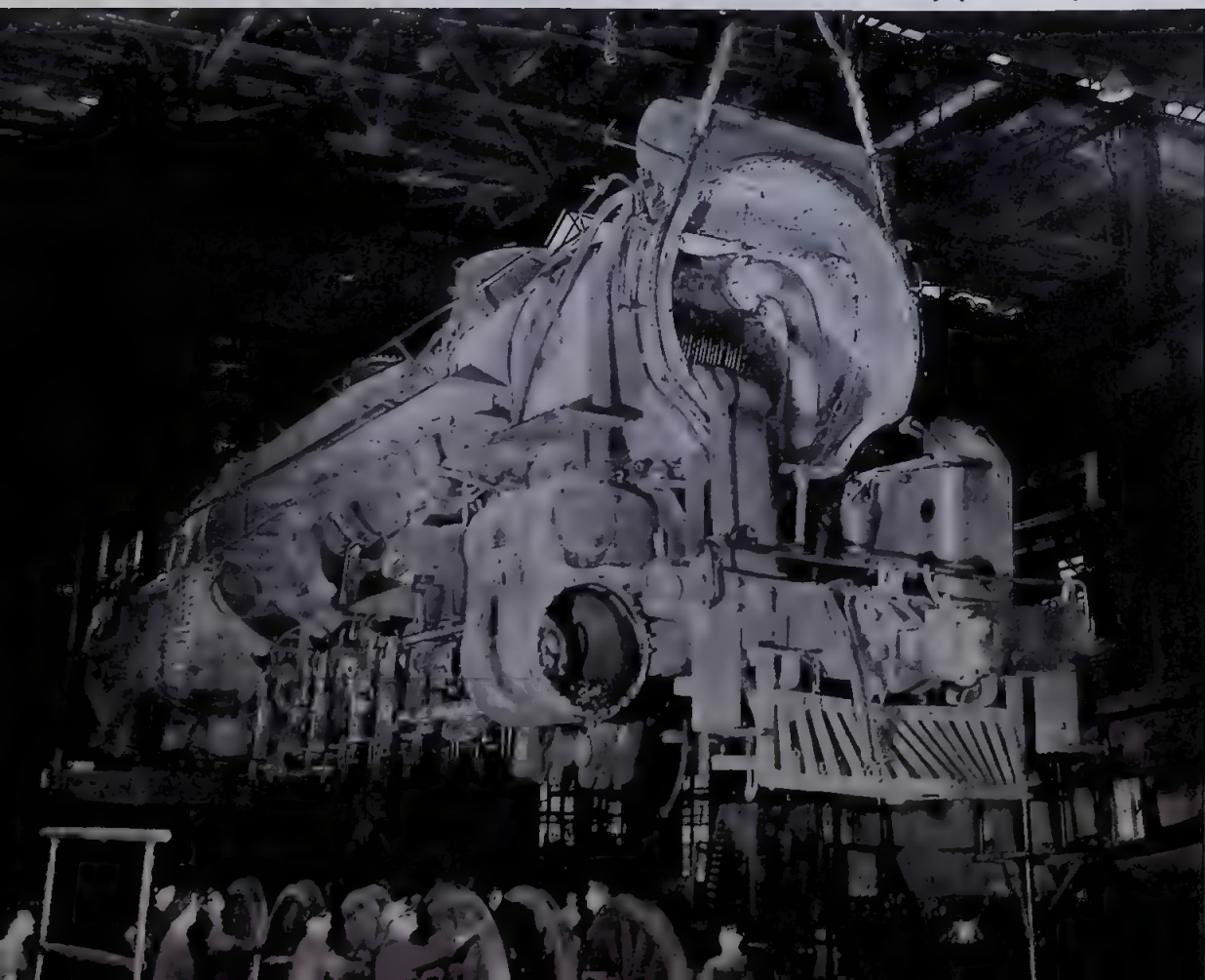
Stripped to their skeletal frames, even to removal of boilers, each was completely rebuilt. The new boilers are equipped with reconditioned flues, tubes, fire boxes, courses —making them ready for heavy-duty service.

Class 2 repair work, such as was performed on four L-1a, one L-1b and three I-1 type locomotives, did not require installation of new boilers. With that exception, however, such work was nearly identical to the Class 1 repairs. The Class 2 work called for new fire boxes, installation of one or more courses, and when necessary—such as in rebuilding the L-1b type—new axles, driving wheels and cylinders.

Since Class 3 repairs were performed on about three-fourths of the 58 locomotives, a quick resume of a typical job of this sort might be of interest. The locomotive is first brought to the stripping shed, where all detachable parts are removed from it, leaving the boiler sitting on the springs and wheels.

Next stop is the sandblast house, where

All shops photos courtesy New Haven.



Back on its "feet."

After the engine has had its superstructure renewed in the various shops, it is reassembled and gently lowered into place on its renewed wheels. Giant traveling cranes handle their huge loads easily and with precision.

boiler and wheels — minus the tank — are sandblasted right down to the metal, removing paint, scale, and dirt. Throughout the entire repair job, careful inspection is made for defects. This inspection begins at the sandblast house and is continued as the equipment proceeds through the shop, conforming to Interstate Commerce Commission regulations as well as to the New Haven's own rigid inspection rules.

Most defects usually are detected easily by visual inspection after equipment has been sandblasted. However, defects in locomotive frames around the pedestals are determined by "whitewashing." Should there be a crack or similar defect in the part, its presence is determined by a dark line or mark in the whiting, caused by oil and dirt in the defect seeping through the white coating. All valve gear parts, main and side rods, crank pins, and driving axles are tested for defects by means of the latest electro-magnetic method.

From the sandblast house the denuded locomotive proceeds to the locomotive shops, where its first stop is the unwheeling pit. There the boiler and frame are lifted clear of the wheels and set on blocking so that all may be further inspected. The lifting is done by huge overhead traveling cranes.

The wheels are taken from the unwheeling pit into the wheel shop, where they are either "turned" (brought to a standard contour by rotating them on a huge wheel lathe) or given new tires. In the latter case the old tires are removed from the wheel and new steel tires are "shrunk on" by heating them so they will expand sufficiently to allow them to encircle the wheel rim. As the tires cool, they contract and thus are held firmly in place.

Meanwhile, boiler and frame have been moved by the overhead traveling crane to the boiler shop, where all sheets, plates, and staybolts needing repair are removed and reconditioned. The flues, removed in the stripping shed, are put through a sandblasting and scale-removing machine. After having passed inspection, they are ready for the process of "safe-ending." This entails cutting off the old ends of flues with a power saw. A new piece of flue, called a "safe end," then is electrically machine-welded to the old flue. When necessary, the flue ends are swedged by heating the end of the flue and reducing its diameter in a hammer. This process sets the flue diameter to the proper size to allow for expansion of same for application in the boiler. The "safe end" is placed nearest the fire box when the flue is re-installed. Before being installed, it is tested to see that the welding is perfect. One end of the flue is blocked, the weld is coated with soap suds, and then air is forced into the open end. Soap bubbles disclose any defect in the weld.

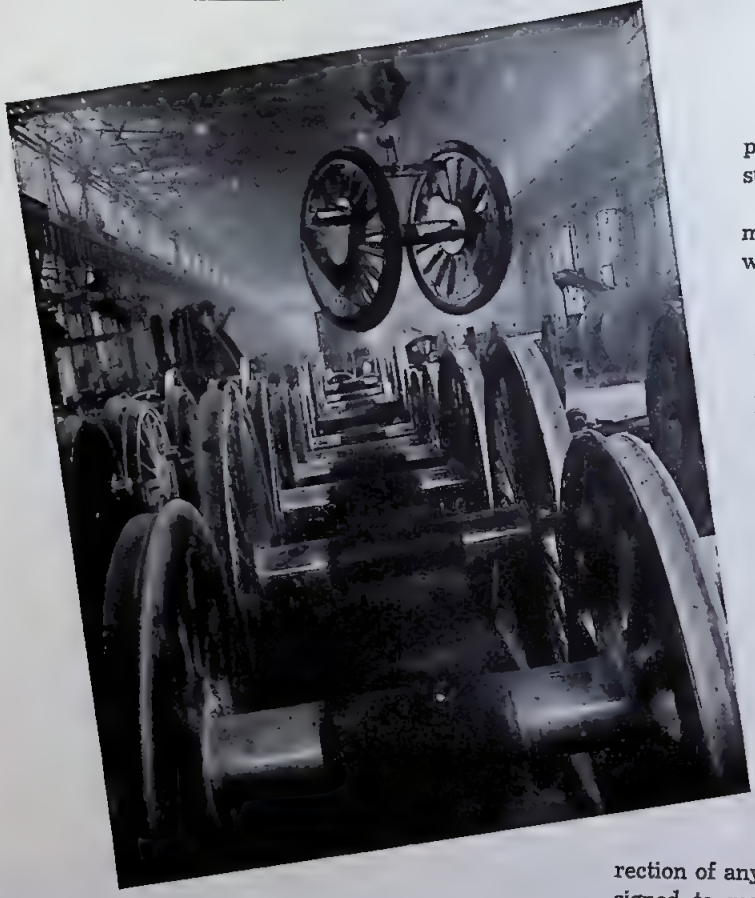
While this work is proceeding, machine shop employees, manning lathes, drill presses, milling machines, boring mills and similar equipment, are reconditioning old parts and finishing such new parts as bushings for main and side rods, valve motion parts, valves, pistons, crossheads and guides, spring hangers, and various pins.

While tank shop workmen inspect the tank for possible rusted plates, splash plates and interior stays within the water section of the tank preparatory to making necessary repairs, the truck shop crew is making all necessary repairs to the engine truck, trailing truck, and tender trucks, including the renewing of worn parts such as pins, bushings, and hangers.

The blacksmith shop performs all types of forgings, repairs to springs, welding, and straightening of bent parts, and, incidentally, supervises all welding done in all the various locomotive shops.

Most perfect horseshoe?

Probably the most perfect horseshoe curve on any American railroad is the one at Torcer, Tex., 85 miles east of El Paso, on the Texas lines of the Southern Pacific. It is a 10-degree curve with a central angle of 235 degrees 45 minutes, the continuous curve being sixty-five one-hundredths of a full circle. At the ends of the horseshoe the tracks are 670 feet apart. The distance around the curve from the two points is 3650 feet, all of which is on a compensated one per cent grade. The difference in elevation between the two points is 24 feet, which explains the necessity for the loop construction.



After boiler repairs have been completed, including installation of renewed flues, the boiler and frame are moved to the erecting shop and set back on the wheels by the overhead traveling crane.

Insulation — boiler lagging — is applied around the boiler, and workmen re-install the cab, pistons, guides, crossheads, cylinder heads, valves, valve heads, and valve motion parts, until the unit once again stands as a sturdy locomotive.

The renewed locomotive now is moved to the finishing shed, where the tank is coupled on and all finishing touches (such as painting, the completion of piping, airbrake installation and electric wiring) are made. The locomotive then is ready for the "slip track," about ⅙ mile long, the rails of which are oiled to reduce traction to a minimum. The locomotive is given a rigorous workout on this track, moving forward and back at various regulated speeds until inspectors are certain that all equipment has had a chance to work without showing defects or hot bearings.

After the slip-track workout, the locomotive returns to the finishing shed for correction of any defects. Locomotives to be assigned to mainline service then undergo a breaking-in period of about two weeks, usually on short runs in local service, during which time they are watched carefully.

The New Haven's conservation program figures prominently in this reclamation work. For example, equipment parts subject to wear are flame-hardened by the oxyacetylene process to extend service life. Castings with worn pockets are rebushed, and round cast-

Views inside the shops.

Nothing of value is overlooked in the process of rebuilding locomotives. Old wheels are "turned," sometimes given new tires, in the wheel shops (above). Photo at left is a general view of the New Haven shops which recently rebuilt 58 engines. Left photo on opposite page exemplifies the thriftiness of the locomotive hospital; even solder is melted from old parts, retrieved, heated again and poured into molds for future use. At far right, workmen make general repairs and apply new lagging to the boiler of a renewed locomotive. When an engine leaves these shops it has the appearance, pep and stamina of a new locomotive.

ings with worn outside or inside surfaces are restored by bushings. To avoid purchase of new castings, broken locomotive castings are reclaimed by welding and fabrication methods.

Worn-out driving axles, heretofore scrapped, now are used as billets from which are manufactured guides, drawbars, binders, eccentric cranks, spring hangers, fixtures, jigs, and other materials, making the purchase of new parts unnecessary.

These are only a few of the steps being taken by the New Haven to make the most of the essential materials it has on hand.

Segregated into their respective classes, the following old locomotives have been restored to service as result of the New Haven's reclamation work: seven K-1b class; seven K-1d; six G-4a; twelve I-1; one I-3; one H-1; four A-1a; four T-2a; nine T-2b; two J-1; one L-1b; and four L-1a.

The K-1b locomotives are of 2-6-0 construction, with 20″ x 28″ cylinders, 200 pounds pressure per square inch, 30,225 pounds tractive effort, and total weight of engine and tender of 284,300 pounds. They are used for switching and in way-freight service. The K-1d locomotives are similar to the K-1b except that they have superheaters, 22″ x 28″ cylinders, outside valve gear, 34,700 pounds tractive effort, pressure reduced to 190 pounds per square inch, and a total weight of 299,300 pounds. Both classes were built by American Locomotive Company and the Baldwin Locomotive Works from 1900 to 1905.

First U. S. tunnel.

The first railroad tunnel in the United States was constructed in 1833 near Johnstown, Pa., for the Allegheny Portage Railroad.

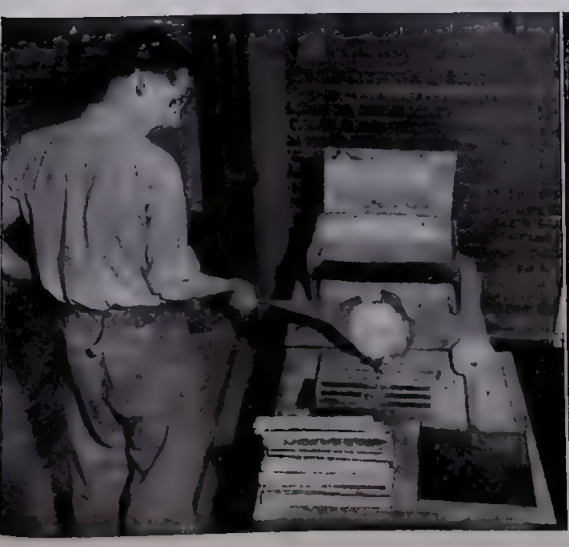
The G-4a locomotives are of the 4-6-0 classification, with 22″ x 26″ cylinders, pressure of 190 pounds per square inch, 27,840 pounds tractive effort, and total weight of 294,860 pounds. Used in work-train service, they were built by Baldwin during 1904 and 1905.

The I-1 engines, of 4-6-2 construction, have 23″ x 28″ cylinders, 200 pounds pressure, 34,493 pounds tractive effort, and total weight of 368,400 pounds. Built in 1907 by Baldwin, they are used for suburban or light passenger train service.

Both the T-2a and T-2b are of the 0-6-0 class switchers, with 19″ x 26″ cylinders, 200 pounds boiler pressure, 31,286 pounds tractive effort, and total weight of 219,000 to 239,700 pounds. They were built from 1900 to 1907 by Rhode Island, American Locomotive Company.

The J-1 types, used in heavy freight or humpyard switching, are of 2-8-2 construction, with 25″ x 30″ cylinders, 200 pounds pressure, 50,600 pounds tractive effort, and total weight of 442,900 pounds. Built by American Locomotive Company in 1916.

The H-1 type, of 4-4-2 construction, has 22″ x 26″ cylinders, 25,725 pounds tractive



From tramp to gentleman in its reincarnation.

The 1026 once looked as shown in the top picture, divested of usable parts and very much out at the seams. After a trip through the shops, during which it acquired a new tender, 1026 was set out on the outside tracks as bright as a new penny and with all its original power restored, ready to aid in the railroads' tremendous task of moving war materials.

effort, 200 pounds pressure, and total weight of 340,200 pounds. They are used in light passenger train service. The A-1a type, of 4-4-0 construction, has 20″ x 24″ cylinders, 22,356 pounds tractive effort, pressure of 190 pounds, and total weight of 254,200 pounds. Built by American Locomotive Company about 1896, they are assigned to work service.

The L-1 type, of 2-10-2 construction, is used in heavy freight service between New Haven, Conn., and Maybrook, N. Y., as well as some other points. This type has 30″ x 32″ cylinders, 200 pounds pressure, tractive effort of 77,800 pounds, and total weight of 562,735 pounds. They were built by American Locomotive Company in 1918.

The reclamation of all these locomotives was accomplished under the direct supervision of Shops Superintendent W. R. Sederquest. The shops turn out an average of 20 locomotives a month, and each of the 58 locomotives mentioned required about six weeks' work. The shops continued to perform Class 3 repair jobs on usable locomotives, withdrawn from active service for that purpose, while the reclamation work on the 58 locomotives which were saved from the scrap pile was going on. It has been estimated that the cost of reclaiming these 58 locomotives was approximately $800,000. To build them anew might entail about $4,800,000.

A Wartime Rail Ramble

★ New York to Milwaukee via Washington, Atlanta, and New Orleans: the 11-day trip of six Eastern railfans.

By Edward A. Hansen.

IT ALL started like this: Having a natural longing to hear the clicking of steel rails and not having much money with which to accomplish this purpose, I started in June to dig into tariffs and came up with a 3900-mile trip for $45.25. Consulting the *Railroad Enthusiast's* good friend, Harry Gillis, assistant general passenger agent of the New York Central System, I received a green board on the rate and forthwith started looking for recruits.

Several married friends were enthusiastic and thought they would go, but after a heart-to-heart talk with their wives behind closed doors, they started to hint that it was dangerous to travel so far from home in these critical times, and backed out. In the final roundup, the party (with the exception of myself) was made up of gay bachelors and consisted of four run-of-the-mill rail fans, a Historian, a gent with a tray suiter, and an Optimist. These last three require an explanation.

The Historian knew where Andrew Jackson's bones were parked, how many men Pakanham had at the Battle of New Orleans,

Linn H. Westcott.

All along the C&O's main line we saw long trains of hopper cars headed by massive articulated engines. This one is thundering up the grade into White Sulphur Springs. It oozed through the town just as if there weren't a station within miles.

Richard E. Prince Jr., 1141 Larchmont Crescent, Norfolk, Va.

and who was the most distinguished occupant of St. Louis Cemetery No. 1 in New Orleans.

Gentle reader, do you know what a tray suiter is? It is an oversized suitcase, far too large and heavy to carry. When placed in the aisle, passengers fall over it, and when parked in the overhead rack, the unfortunate passenger sitting beneath it winds up cross-eyed after a day of trying to look at the scenery with one eye, and keeping the other cocked on the tray suiter. Also, because of its weight, it has to be bought back, at great expense, from a constant procession of porters and bell boys.

We also had an Optimist! He sported a camera, and the net result of 11 days' travel by rail was a picture taken through the window of the Southern Railway's Rat Hole Division, an ante-bellum mansion in the bayou country, and the whole party lined up in front of a sepulcher in Metairie Cemetery, New Orleans. He also claims to have snapped a picture of the writer pulling the handle of a one-armed bandit—also known as a slot machine—in a Louisiana country store. I need not tell my friends that such a picture, if it exists, obviously is faked.

In high spirits and with pockets full of money, the party left New York on a Saturday morning, on the Pennsylvania Railroad's No. 203 to 30th Street (Philadelphia), where we changed to No. 403 for Washington, arriving five minutes late because of track-laying activities at Laurel, Md. Washington was hot and we spent an uncomfortable 35 minutes waiting for the gates to open for the Chesapeake & Ohio No. 5, the *Sportsman*, on which we were riding to Charleston, W. Va. She left six minutes late due to heavy baggage and mail, and lost time steadily during the day, reaching Charleston an hour and five minutes late. The C&O has fine equipment and an excellent road bed. Incidentally, its steak dinner at $1.45 is something to write home about.

After a good night's rest we were on hand the next morning for the short run to Cincinnati. It was a dismal, rainy day, and as our train, the C&O No. 3, was 88 minutes late, we spent the time profitably by watching several 110-car hopper trains going east through the station. One of these was powered by the latest member of the C&O family, a 2-6-6-6 Allegheny type engine. We picked up about 15 minutes and, with C&O's Mountain type engine No. 306 at the head end, crossed the Ohio River in brilliant sunshine and arrived at the Union Terminal in Cincinnati. After dinner we took a trolley across the river to Covington, Ky., where we witnessed the departure of a couple of L&N southbound trains. Then back to the

Nansen-Oakes-Barham, 6022 Hartford St., St. Louis, Mo.

We met the little three-car *Rebel* of the GM&O looking for all the world like one of the "undergrounds" in London.

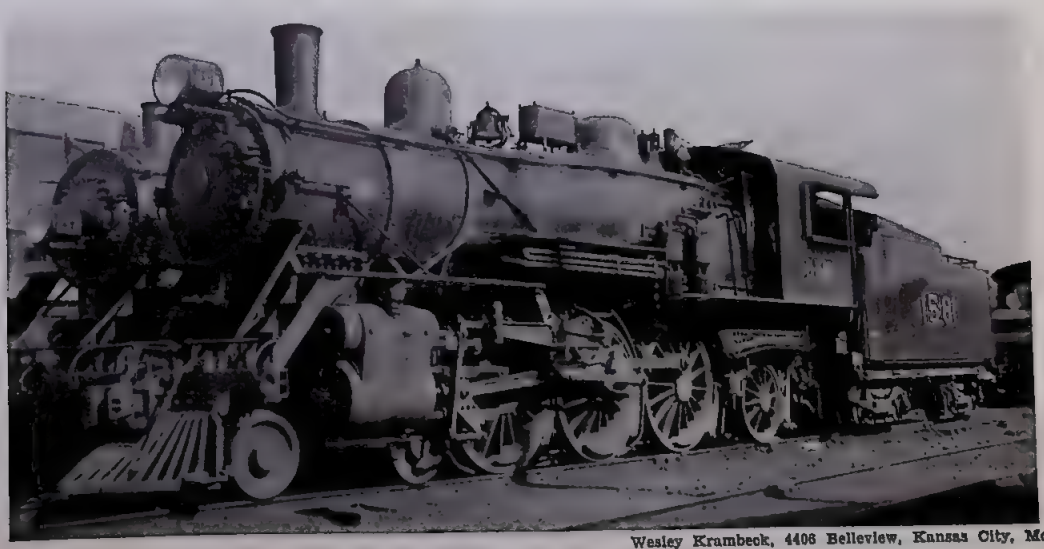
We had the opportunity to see a number of locomotives around the stations, like the Southern Mike at Atlanta (some people call them MacArthurs now) and the L&N Pacific at New Orleans. The Southern 2-8-2 is that road's Class Ms-1; 26" x 30" cylinders, 200 pounds pressure, 63" drivers, 54,700 pounds tractive force; weight 288,000 pounds without tender. The 4-6-2 is Class K-2a on the L&N: 20½" x 28" cylinders, 200 pounds pressure, 69" drivers, 29,000 pounds tractive force; weight 201,500 pounds without tender.

Union Terminal for an inspection of that magnificent structure.

Bright and early the following morning we boarded the Southern Railway's *Royal Palm* for the run over the old Cincinnati Southern to Chattanooga and Atlanta. The seventh member of the party bid us a tearful goodbye, as he was bound for home via Detroit and Buffalo. The Rat Hole Division, as it is affectionately known among railroad men, is as interesting a piece of road as I have seen east of the Rockies, with its 16 tunnels and numerous trestles and bridges, winding its way through the mountains of old Kentucky. High Bridge, spanning the Dix Fork of the Kentucky River, was originally erected in 1876 and was therefore one of the first examples of major cantilever bridge construction. It was rebuilt in the early part of the century and is today one of the highest railroad bridges in the country, being 311 feet above the river. This road was expensive to build both in money and lives, and some authorities assert that every tie on the road from Cincinnati to Chattanooga cost a life.

The big green Pacific on the head end ran on schedule and we arrived in Atlanta 20 minutes before a blackout. Fortunately, we reached our hotel before it started—that is, five of us did. The sixth member of the party viewed the blackout while resting gracefully on his tray suiter in the Atlanta Terminal. I said *viewed* the blackout and I mean exactly that. You have to hand it to Georgia for knowing how to put on a real show with giant firecrackers and rockets bursting over the city in truly Fourth of July fashion. How differently we do things in New Jersey! When we experience a blackout at home I pick an easy chair and remain there for fear of falling over the dog or an end table and skinning my Roman nose.

We departed from Atlanta the next morning on the Southern Railway's *Southerner* for the final lap to New Orleans. May I suggest that any railfan who is fond of reverse curves should save his money and ride the Southern Railway from Atlanta to Birmingham. These are reverse curves! I tested them out by waving to the engineer through my window and then stepping through the coach and looking into the blue eyes of the fireman as he sped by. Why these curves? Well, I did some thinking and believe I have the answer. Georgia corn is highly potent, to say the least. Some authorities even claim that after partaking of the liquor a man is unable to see straight. It is a mathematical certainty that if you do not see straight, you must see in a curve. Could it be possible—without libeling a great and friendly rail-



Wesley Krambeck, 4406 Belleview, Kansas City, Mo.

Joseph P. Sadler, 1723 S. Court St., Montgomery, Ala.

At many places on our journey there were strong evidences of how important the railroads are when lots of material must be moved with dispatch. Most main lines are running freights with the frequency of the A trains in Manhattan. This Southern Railway 2-8-2 is dipping under the L&N bridge on its way to Irondale, Ala. The engine is Lima-built, 1917. This and the picture of the *Southerner* on the opposite page are the work of Joseph Sadler of Montgomery, who turns many a neat print into his hypo. The negative was made against the light, and, as always, Sadler used a filter to increase the pictorial quality he wanted to obtain.

road—that the party who first surveyed the railroad fell afoul of the aforementioned corn?

In Birmingham we caught a glimpse of one of the picturesque Frisco engines in all its glory, and a couple of us had to pin the Optimist and his camera firmly to the floor until the temptation passed. The afternoon was spent on a fairly fast run through Mississippi, broken only by a pleasant surprise at the sight of a long northbound freight on a siding near Meridian with Erie Mikado No. 3081 on the head end. That brought back nostalgic memories of Bob Maunce, Bob Collins, Erie diners, baggage cars with open doors, and a bar presided over by a perspiring negro bartender concocting long, cool drinks that helped to make you forget the 98-degree temperature in the shade on the Wyoming and Jefferson Division fan trip. Crossing the 5.82-mile trestle over Lake Pontchartrain, we met the little three-car *Rebel* of the Gulf, Mobile & Ohio, looking for all the world like one of the "undergrounds" in London.

Our arrival at New Orleans was on the

advertised and it was good to see the bright lights of Canal Street again. My first sight of New Orleans was in the year 1906, and although I have returned several times in the intervening years, the city has never lost its charm for me. As far as I am concerned, New Orleans and San Francisco remain the two most fascinating cities in America.

After checking in at the St. Charles, we went to the old French market for coffee and doughnuts, and so to bed. The next day was devoted to sightseeing in the French quarter and an afternoon's sail on the Mississippi, followed by an excellent dinner at Antoine's, one of the oldest and most famous restaurants in the country. The following day we hired a car and started another day of sightseeing that covered everything in and around the city as well as part of the bayou country on the other side of the Mississippi, which we crossed by the new 13-million-dollar Huey P. Long Bridge. This is a magnificent, long, high-level cantilever bridge over which the Missouri Pacific and the Texas & Pacific railroads enter New Orleans.

We also made a stop at Metairie Cemetery, and as none of its occupants offered any objections, the Optimist broke out his camera and a took a group picture of the party. While the Historian peered over the tombstones, I set out on a quest of my own. Herbert Asbury, in *The French Quarter,* tells about a lady of light morals and great money-making ability who dominated the night life of the city in the latter part of the nineteenth century. In due time she passed on and was buried under an elaborate tombstone near the corner of Pontchartrain Boulevard and Metairie Road. Along came the motor age and the traffic authorities installed a red blinker light at this busy corner. Word passed around and at night frivolous citizens of the town gathered at the corner to watch the red light blink on and off over the lady's tombstone. Eventually, the police got sick and tired of the whole performance and removed the light, traffic notwithstanding. For the record, let me add that I did not locate the stone.

With a 4000-horsepower Diesel on the head end, we left New Orleans on the L&N *Azelean* the next morning for a run along the beautiful Gulf Coast to Montgomery, Ala. We were detained in the New Orleans yards an hour and a half when an elderly woman dropped dead in the diner of our train, but the Diesel made up 70 of the 90 minutes lost in a fast run from Flomaton to Montgomery. One member of the party had a nerve-wracking experience at Flomaton when he alighted from the train to bid a tender farewell to a lovely Southern lady. The minute he reached the platform a couple of immigration inspectors pounced upon him and wanted

Joseph P. Sadler.

to know where he was born, why he was born, and did he have a draft registration card? He did, but he was so unnerved by the ordeal that he nearly boarded the Pensacola train with the lady. Several husky members of the party guided him back onto the right train and brought him safely to Montgomery.

Promptly at 4:45 the next morning the phone rang and we called the station hoping that the *Pan-American* would be late but, thanks to the Diesel, she was on time and we made a fast run to Nashville, Tenn., arriving 10 minutes early. The *Dixie Flagler* was marked up as being an hour and 24 minutes late from Florida, so we had lunch and spruced up until she arrived. We discovered later that she had hit an auto with two men in it just outside of Miami. This train turned out to be the *Henry M. Flagler* that formerly operated locally between Jacksonville and Miami. It was a warm night, so between Danville and Chicago a couple of us opened the upper part of one of the vestibule doors, and did we have a fan trip all by ourselves! I collected enough cinders in the 123 miles to last me all Winter, although I lost a lot of them walking through Dearborn Station on the way to the taxi.

Before breakfast the next morning I enjoyed a splendid view of the Windy City from my room on the thirty-sixth floor of the Hotel Morrison, and saw the *Century*—looking like a toy train—arrive at La Salle Street Station. That day we took a bus ride up the Gold Coast, returning on the "El" to the Loop for an afternoon's trip to Milwaukee. We bought tickets for the North Western *"400"* but got badly fooled, as this train only carried passengers for the Twin Cities. Our train was a conventional Pacific with 10 cars, and on top of that, the engine developed trouble and arrived in Milwaukee eight minutes late. We walked over to the Milwaukee Road station and lined up for the Chicago-bound afternoon *Hiawatha.* We struck up a conversation with the gateman there, who with true Milwaukee Road hospitality invited us out on the platform. To the question of why a conventional black Hudson was lined up in the station, he replied that she was a relief engine ready to take over in case the *Hiawatha* developed engine trouble on the road. He added that she was not up to snuff, 110 miles per hour being the best she could do with 14 cars. Shades of Casey Jones!

At 6:02 p.m., five minutes late, the big gray streamlined Hudson No. 101 steamed into the station with 14 cars and came to a smooth stop. We boarded what turned out to be the finest coach I have ever seen. These coaches went into service a few months ago and, besides being luxuriously appointed, are equipped with roller bearings and shock absorbers. Add the Milwaukee's welded rail, and the speed of this train is very deceptive unless you have a watch in your hand. We left Milwaukee at 6:06 and the first dozen miles after leaving the city line took as many minutes, but then the gray Hudson laid back her ears and went to work. From Sturtevant Station to Milepost 14, a distance of 47.8 miles, the time elapsed was 27 minutes 20 seconds, an over-all speed of 104.9 miles per hour. As this includes a slowdown to 90 miles at Ranney Crossing, you, dear reader, may write your own ticket as to the maximum speed attained. The last 11.6 miles from Edgebrook to Chicago took 15 minutes 20 seconds, and we arrived at Union Station at 7:11 p.m., 65 minutes after leaving Milwaukee. I now have a suspicion that the famous Schultz, fastest engineer on the Milwaukee, was at the throttle of No. 101 that afternoon.

The following morning, three of us rode down to Englewood Station, where we spent an enjoyable hour watching Hudsons, K-4's, and *Rockets* come and go. The Optimist, who expects to join the army shortly, passed the morning in the gory stockyards, and the Historian counted the restaurants in the Loop. We started east on the New York Central *Pacemaker* that afternoon, stayed overnight in Cleveland, and on the final day boarded the *Empire State Express* for the home run.

In spite of the fact that the *Empire* left Buffalo 22 minutes late, she arrived at Grand Central on time. Here the final catastrophe occurred. The gentleman with the miniature trunk committed it to the tender care of a Red Cap and promptly lost both of them. By following a line of reasoning worthy of Sherlock Holmes, he started in ever-widening circles from the information booth in the station and finally located Red Cap and tray suiter at the corner of 43rd Street and Vanderbilt Avenue.

It was a great trip, and a swell bunch of fellows made it with me. If I had to do it over again, I could not wish for better companions.

George DeKoven, *L&N Employees' Magazine*, Louisville, Ky.

The *Dixie Flagler*, so well advertised by the C&EI since its initial run about two years ago, also operates a part of the way behind L&N power. We opened up the upper part of one of the vestibule doors and collected cinders and scenery for 123 miles. At Milwaukee we boarded the *Hiawatha* behind 101, starting for Chicago only one minute after it arrived. It made the 48 miles beyond Sturtevant at an *average* speed of 104.9, including a crawl through Ranney at only 90 miles per hour. This is the same engine and train we rode, but the picture was taken when it was heading west through Wauwatosa, a suburb of Milwaukee, late in 1941.

R. H. Kindig.

The *John Wilkes* heading for New York on the Lehigh Valley.

Photograph by Donald W. Furler,
94 W. Main St., Glen Rock, N. J.

The Lehigh Valley's No. 28, the *John Wilkes*, tackles the grade up out of the Delaware River Valley, between Phillipsburg, N. J., and West Portal. This train leaves Coxton at 7:16 a. m. and goes through Wilkes-Barre, Allentown, and Bethlehem on its way to New York, where it arrives at 12:20. The Lehigh's streamliners are good examples of the art of Otto Kuhler, who has proved to many railroads that, while streamlining has little aerodynamic effect, it certainly does return many times its cost in increased passenger appeal. With this in mind, Kuhler has concentrated on streamlining the appearance of locomotives rather than their actual aerodynamic outline. This can be done, effectively, as in the case of the Lehigh's engines, at reasonable cost and without adding much weight, by keeping to the boiler lines as much as possible instead of building up false shielding on added framework. As Kuhler describes his work, "The public wanted lines and color and we gave it to them!"

Down in Maine--Two-Footers

ONCE Maine was crisscrossed with railroads of the oddly narrow two-foot gauge. Now only the 6.16-mile Monson Railroad remains. It is owned by the Monson Slate Company and connects the company's quarries with the Bangor & Aroostook.

In years gone by when other two-footers remained, Maine was quite a favorite state for vacation excursion riding. The narrow-narrow-gauges offered an informality not to be found even on the more standard three-foot narrow-gauges. Now the Maine vacations of narrow-gauge connoisseurs are but a memory, for even the Monson, although a common carrier, offers no passenger service and is hardly more than a company facility, a method more economical than trucks for carrying slate to the railroad.

Fortunately, photographs can bring back the glory of the days when the slim tracks carried full passenger trains and one could ride for more than 100 miles along the two-foot-gauge main line of one system alone, the Sandy River & Rangeley Lakes. The complete story of the Maine two-footers was told in TRAINS for July, 1942.

All photos from collection of L. W. Moody, 37 Cottage Farm Rd., South Portland, Me.

Monson Railroad right of way in Winter is shown at upper left, opposite page. Other photos are all on the Sandy River & Rangeley Lakes. The station scene above is at Strong, while the photo below might well have been taken in 1890 but is actually 1935 at Phillips, Me. The mixed train on the opposite page is in the siding at Salem waiting for the "down" passenger train.

Thomas Leiper's Railroad

★ Part of the second railroad laid in the United States is now a portion of B&O Crum Creek Branch.

By Lawrence W. Sagle.

THE Crum Creek Branch of the Baltimore & Ohio Railroad, extending from the main line at Chester, Pa., a distance of 2.6 miles, has the unique distinction of being on the same location, for a short distance, as the original Leiper Rail Road, built in 1809. This was apparently the second railroad laid down in the United States. There is a record of but one previous to it, the tramway built by Silas Whitney for transporting gravel from the top of the western slope of Beacon Hill to Charles Street, Boston, a distance of ¼ mile.

The Baltimore & Ohio is proud of the fact that it was the first "common carrier" chartered in the United States (1827) and that it still operates under its original charter. All roads before it were merely tramways, built for and used exclusively by the owners. In this respect, the Baltimore & Ohio is doubly honored in that part of its system consists of the second railroad laid down.

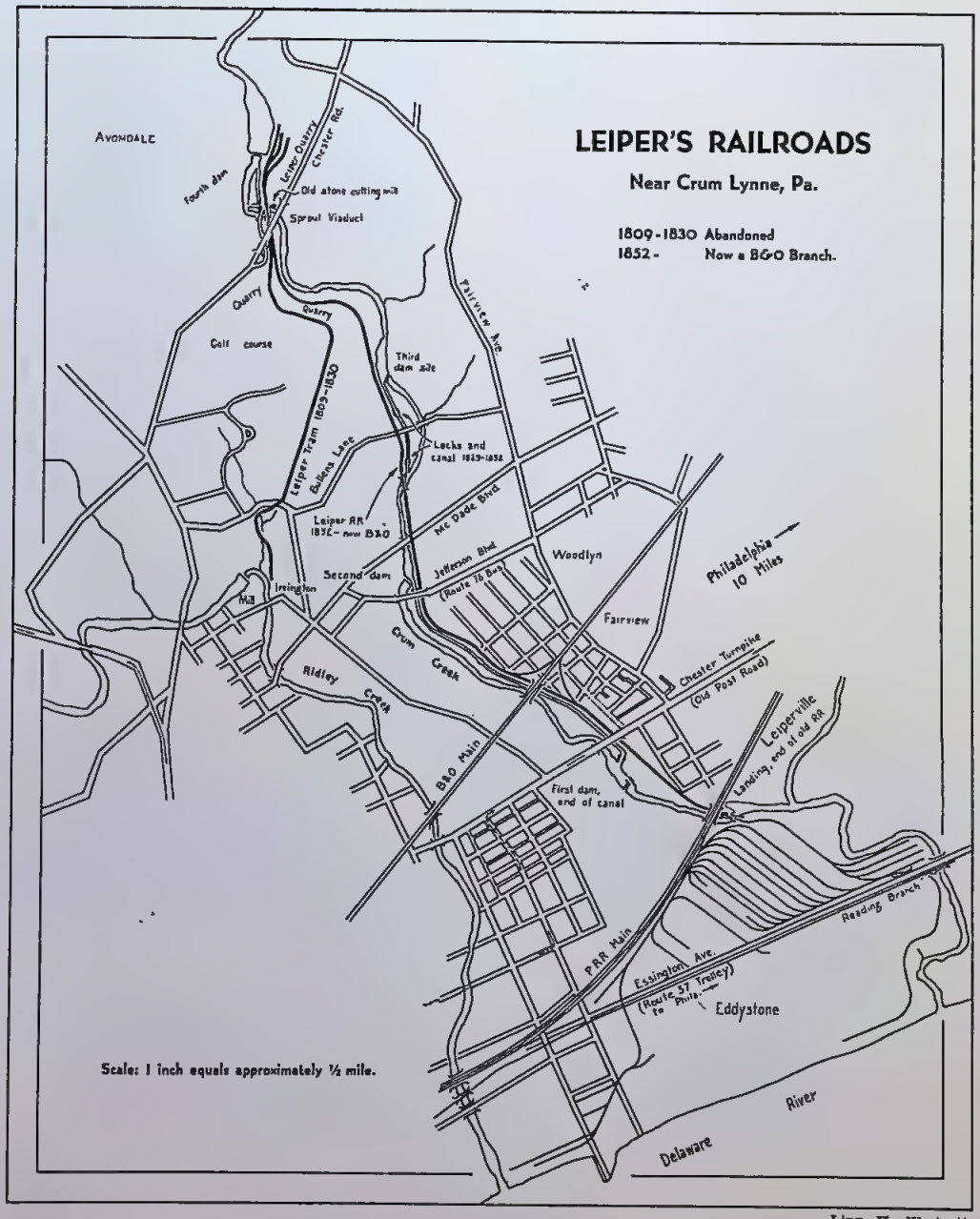
The idea of using a railroad for hauling stone was adopted by Thomas Leiper, of Philadelphia, who owned a quarry in Delaware County at about the end of the present Baltimore & Ohio Crum Creek Branch. Mr. Leiper had first built an experimental railroad, 60 yards long, which was laid out by John Thomson, civil engineer of Delaware County, and constructed under the direction of a Mr. Sommerville. This experimental railroad was installed in Buck's Head Tavern, in Philadelphia, where it was on public display.

The following interesting account of Thomas Leiper's railroad is found in the *History of Delaware County, Pennsylvania* (Ashmead, Philadelphia, 1884):

> In 1809 and 1810, Thomas Leiper constructed the first railroad in Pennsylvania and the second in the United States. Strictly, it was a tramway and not a railroad. It was ¾ mile in length, and used in transporting stone from his quarries in Springfield to tidewater at Ridley Creek, near the mill of Pierce Crosby (the present Irvington Mill, North Chester Borough). In May, 1809, Leiper made an estimate of the railroad, but the project was not completed until January or February of the succeeding year. The estimate of the cost of the road, including the survey, was $1,592.47. The survey and draft of the road was made by John Thomson, and in 1873, the original map drawn by Thomson was presented to the Delaware County Institute of Science. In September, 1809, under the supervision of Thomson, the experimental track was built, the construction being done by Sommerville, a Scotch millwright. The road was 60 yards in length, and graded an inch and a half to the yard. The gauge was four feet and the sleepers eight feet apart. The experiment with a loaded car was so successful that Leiper had the first practical railroad built in the United States.
>
> The rails of Leiper's road in Ridley were of wood and of course soon yielded to the heavy friction of the car wheels, which were of cast iron with flanges, and were not renewed, Leiper designing to lay a stone track. As it was, it was continued in service for 19 years. [Later, in 1852, both the railroad and the later canal were superseded by the present road with iron rails.]

The northern terminus of the old Leiper Rail Road was near the present end of the Baltimore & Ohio's Crum Creek Branch, at the old stone sawmill almost directly under the fine modern Sproul Viaduct. From the old mill south to the abandoned quarry, or about ⅛ mile, the location of that part of the present Crum Creek Branch is practically the same as the old Leiper route. From the abandoned quarry, the Leiper road bore off southwesterly, in an almost direct line, to the landing on Ridley Creek, just below the present dam at Irving's Mill.

The Leiper Rail Road, with its timber rails and sleepers, its wooden cars with flanged iron wheels, and its motive power furnished by oxen teams, remained in operation from 1809 until 1829 or 1830. Then, at nearly the same time that the Baltimore & Ohio began to experiment with steam engines, Mr. Lei-



Linn H. Westcott.

per's son abandoned the road and arranged for an all-water transportation line via Crum Creek, by converting a portion of the stream into a canal with three dams and the necessary locks. The lower dam and basin, where the final transfer to tidewater at the Delaware River was effected, was located just below the present Chester Turnpike or Old Post Road crossing near Eddystone. The

The two Leiper railroads.

Leiper's first railroad, which was later replaced by a canal, is the left bold line in the upper section of the map. Built in 1809, it was abandoned in 1830. The canal served as rock transport from 1829 to 1852, when the second railroad was built (right bold line). The waterway is shown paralleling the second railroad. Only about 500 feet of the old line is used north of the wye which connects it with the Baltimore & Ohio main line. The entire southern portion is used.

second dam was near the Jefferson Street crossing; the third, about ¼ mile below the abandoned quarry. Between the lower basin and the second dam a canal was built on the east side of the creek and from the third dam down to about half way to the second dam a canal was built on the west side of the stream. The remainder of the distance was covered by using Crum Creek. Thus the "second railroad" became a very useful canal.

The idea of using canal power for hauling stone had been one of the cherished ambitions of the first Mr. Leiper. As early as 1790, he wanted to build the canal which 40 years later was constructed by his son, George C. Not being permitted to build his canal, he later turned to the means of land transportation, the tramway.

In the *History of Delaware County, Pennsylvania,* the following account is given of the Leiper Canal:

> The late Thomas Leiper, Esq., of this city, contemplated, in 1790, a canal along his estate in Delaware County, in order to complete an easterly communication between his quarries on Crum Creek and the Delaware River. . . . He found himself foiled by the Legislature in that attempt. In 1809 he caused a railroad . . . to be constructed for his quarries to Ridley Creek. In 1825, since the death of Mr. Leiper, his son, George C. Leiper, Esq., revised the idea prepared by his father, and on Saturday, the 16th inst., the conerstone of the canal was laid by William Strickland, Esq. . . .
>
> The canal, which was about a mile in length, not only was used to transport stone in boats to the creek below Leiperville, but the water was led by it as a race to supply water to the mill at Leiperville. The lower part of the canal has been filled in, and the upper part as far as the mill at Leiperville is still used as a race to convey water to the factory.

The upper dam and basin was located on the creek about ¼ mile below the quarry and above Bullen's Lane. Here, the canal took off on the west side of the creek, tunneled under the lane and proceeded to a point midway between it and what is now McDade Boulevard, where the creek was again joined for the remainder of the distance to the second dam just north of Jefferson Ave. From this point the canal lay east of the creek down through Crum Lynne and under the Chester Pike to the lower dam and basin at Eddystone. Mills along the route of the canal used the water in their races to furnish power.

Flat-bottomed boats of eight-ton capacity were used for hauling the stone. Two of the locks, named *William Strickland* and *Elizabeth Leiper,* still remain, as do sections of the original canal bed. Rain water fills the upper lock at the northern edge of Bullen's Lane, but the canal bed remains dry.

After about 22 years of operating the canal, the same George C. Leiper, in 1852, constructed another railroad from the quarries down Crum Creek to a landing on that stream, just below the present crossing of the Pennsylvania Railroad. Upon completion of this new line the canal was abandoned.

Like the wooden rail route of 1809 and the canal that superseded it, the new railroad of 1852 was operated by the Leiper family, for 35 years. The new road, however, from its northern terminus near the old mill, followed the right of way of the old one only to the abandoned stone quarry.

The second Leiper Railroad began on the east side of Crum Creek at the Avondale quarry, crossed the creek on a wood trestle beside a covered wood highway bridge, and bore off in a southerly direction to follow the route of the original line for about ⅛ mile. From here the new railroad followed Crum Creek down over Bullen's Lane, across the creek again on a low timber trestle at a point where the canal joined the creek. From this point the railroad lay east of the creek, continuing on across Chester Pike to a landing on the creek near the Delaware River.

The railroad served its purpose well, as hundreds of tons of stone moved from the quarries on the way to such construction operations as the Delaware Breakwater, the Broad Street Station, Philadelphia, and many others. The stone was of an excellent grade and the demand was great. Horses continued to furnish the motive power on the railroad until the Baltimore & Philadelphia Railroad Company took over the operation on March 15, 1887. The Baltimore & Philadelphia was a subsidiary of the Baltimore & Ohio at that time, and is now the Philadelphia Division of that line. The Leiper Rail Road became the Crum Creek Branch of the Baltimore & Ohio.

With the spread of modern highways and the use of motor trucks, the quarry company turned in later years to that form of transportation, and the branch is no longer used west of the main line of the B&O. However,

in the charter, the railroad must restore service at any time that the quarry owner requires it.

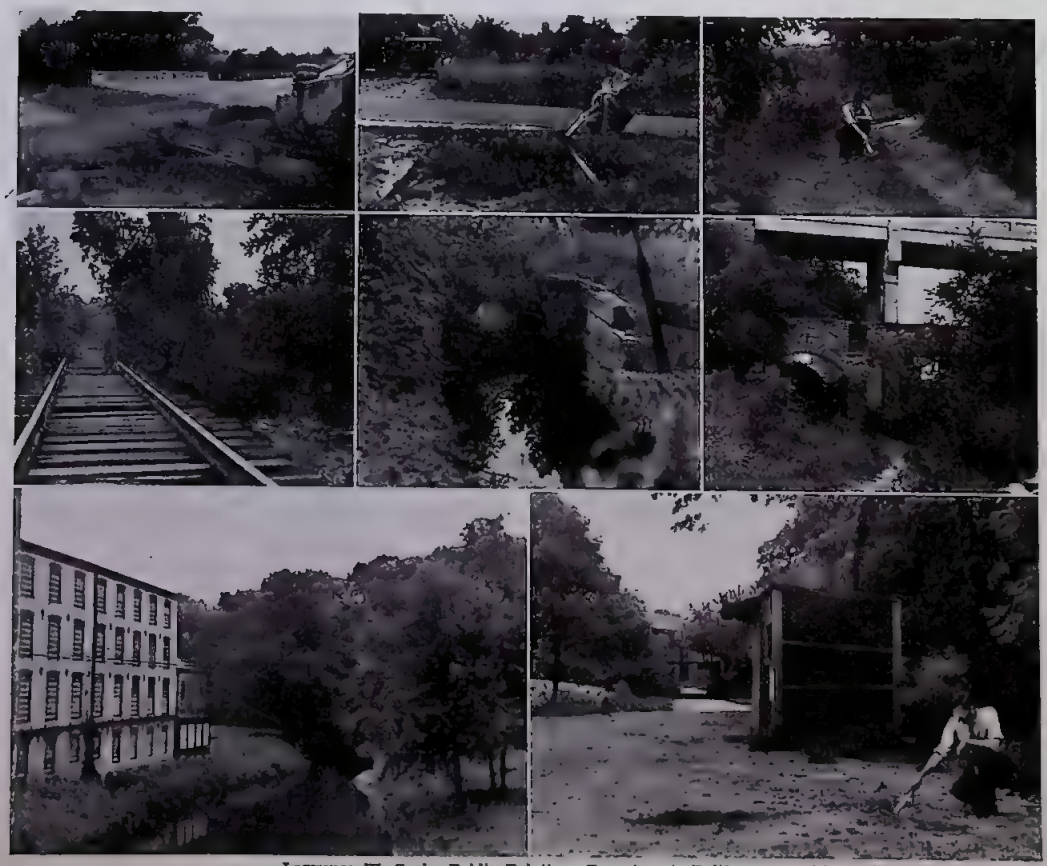
There is no marker on the property to point out the historical significance of the two streaks of rusted iron that stretch up the little valley, alongside Crum Creek, passing under the high-flung arch of the Sproul Viaduct, which carries the Chester Pike over the valley. The picturesque old mill, which is more than 100 years old, is roofless, but serves, to those who know, as a monument to mark the spot where Thomas Leiper started his railroad in 1809.

The Delaware County Chapter of the Daughters of the American Revolution has placed a bronze tablet on the parapet of the Sproul Viaduct, reading "In the valley spanned by this bridge was the northern terminus of the first permanent railway in the United States. The road projected by Thomas Leiper afforded a means of transporting stone from Crum Creek to tidewater on Ridley Creek from 1809 to 1828. . . ."

The terminus on the quarry property of C.

Traces of the old line.

There are many traces of the second Leiper Rail Road. Reading from left to right, top to bottom, in the photo series below are: 1, the tracks at McDade Boulevard, covered over with paving. 2, where Bullen's Lane crosses the abandoned line; Joseph M. Mannix shows where the rails disappear beneath the roadway. 3, Paul J. Schieck inspects the rail at the Avondale Road crossing. 4, Railfan Mannix follows the track across an old trestle over Crum Creek, north of McDade Boulevard. 5, remains of a lock on the Leiper Canal, which superseded the original Leiper Rail Road and was later replaced by the second railroad. 6, all that is left of the old stone mill. The new Sproul Viaduct, towering above the old mill, carries the Chester Turnpike over the valley. 7, the original railroad's terminus at Ridley Creek. There is a little inlet just back of the trees; this is probably where the stone was unloaded from the cars into the flat-bottomed boats for their trip down the creek to the Delaware River. 8, Mr. Schieck uncovers part of the original track laid in 1852, now buried beneath the roadway into the quarry. Mr. Mannix, in the background, shows where the track approaches the trestle alongside the covered bridge. Schieck and Mannix are members of a committee studying ways and means of restoring the upper reaches of the old railroad.



Lawrence W. Sagle, Public Relations Department, Baltimore & Ohio Railroad, Baltimore, Md.

See page 3.

You will want to enter the competition announced on page 3 of this issue. It is an opportunity to tell the rest of the United States about that particular railroad you are so fond of, or about the railroads of any particular region, such as the Chicago area with its 34 railroads, or the Pacific Northwest, or Central America, or Western New York. It's also an opportunity to earn extra money to help pay the second installment of your income tax.

I. Leiper under the shadow of the Sproul Viaduct begins with two parallel sets of standard-gauge rails skirting the deep quarry pit. A switch (covered with earth) narrows the line down to a single track to cross Crum Creek on a trestle supported by two timber bents. A covered highway bridge parallels the track across the creek on the upstream side. This historic wood bridge, condemned for public use, still serves the five-ton trucks entering the quarry over a private road.

Swinging south in a wide curve, the line goes under the Sproul Viaduct to parallel a private lane, being carried on a three-foot embankment on the west side, and after a couple of hundred feet the track plunges directly into the woods. Trees and brush grow on either side, so dense in places that the sunlight barely filters through. The well kept green of a golf course adjoins the west side, while the creek is visible on the opposite. A quarry, one of the originals not being worked at the present time, takes the place of the golf course. It was here that the original railway lay on the site of the present one for approximately ⅛ mile before swinging westward toward Ridley Creek.

The modern railroad continues to follow Crum Creek, however, past another unused quarry whose pit is filled with water. On the east side, between the track and the creek, remains of the old canal put in their appearance, with an old lock at Mullen's Lane. Paving atop the rails shows the highway's predominance at this point.

South of this crossing, the track plunges into heavy woodland with tall trees flanking either side, making an arch of green over head. Again the trees open; a trestle appears as Crum Creek changes its course to pass the remains of another lock and cross beneath the track. With the trestle safely crossed, the track skirts the east bank of the creek about 12 feet above the water line. The new modern concrete McDade Boulevard comes down hill to cross the track at an angle; a light covering of tar hides the rails.

Beyond this point, another short trestle supported by steel I-beams crosses a branch of the creek, after which Jefferson Avenue crosses high above on a steel bridge. The track curves to the left in a wide arc, marking the ends of a few streets and back yards of Woodlyn.

Then the track comes into the open where bright railheads and a smattering of sand mark the beginning of the section still in use. There is approximately 500 feet of this before a switch takes off to the northern leg of the wye to the B&O main line. The Leiper line drops down grade to pass beneath the two-track main, which is carried by a steel trestle also spanning the creek.

Beyond this point a spur from the main crosses over a grade on its way to a barrel factory and the remains of a small team yard. The southern leg of the wye, with its switch, is soon passed, a culvert drains another stream to the creek, and a row of houses and buildings form the east side of an unpaved street with the railroad as the west side. The wide, modern Chester Pike, formerly Post Road, is crossed and a pair of gates bar the way into Eddystone. Beyond these gates the Leiper Railway connects with the Pennsylvania Railroad and proceeds beneath the Pennsy main line to join the Reading Company tracks near the Delaware River.

This marks the end of the Leiper Railway, now officially known as the 2.4-mile Crum Creek Branch of the Baltimore & Ohio.

The Philadelphia Chapter of the National Railway Historical Society has appointed a committee to study ways and means to restore the upper reaches of this old railroad and to clear away the weeds and trees that have overgrown the track and right of way. And a worthy project it is, as too many of our old and valued historical landmarks have been allowed to sink into the jungle of neglect and forgetfulness.

All photos and data courtesy Elmer Cumming, 3039 Bartlett St., Oakland, Calif., except as noted.

Old El Cars Find a New Home

IN THE five important cities across the bay from San Francisco a 500-mile suburban electric railroad system was abandoned last year, throwing all its normal traffic onto another system. The abandoned lines were those of the Interurban Electric, Southern Pacific subsidiary, and the traffic went to the Key Route, which even took over some of the actual Interurban Electric trackage.

The farthest north of this group of cities was Richmond, western terminus of the Santa Fe Railroad. The electric car line from Berkeley, Albany, Oakland, and Alameda toward Richmond had been severed some years before the war, so the rush of workers to and from Richmond war plants was too much for the public transportation facilities to handle. The buses had more than they could manage even before gas rationing, and good public transportation of the huge army of workers became a real war problem.

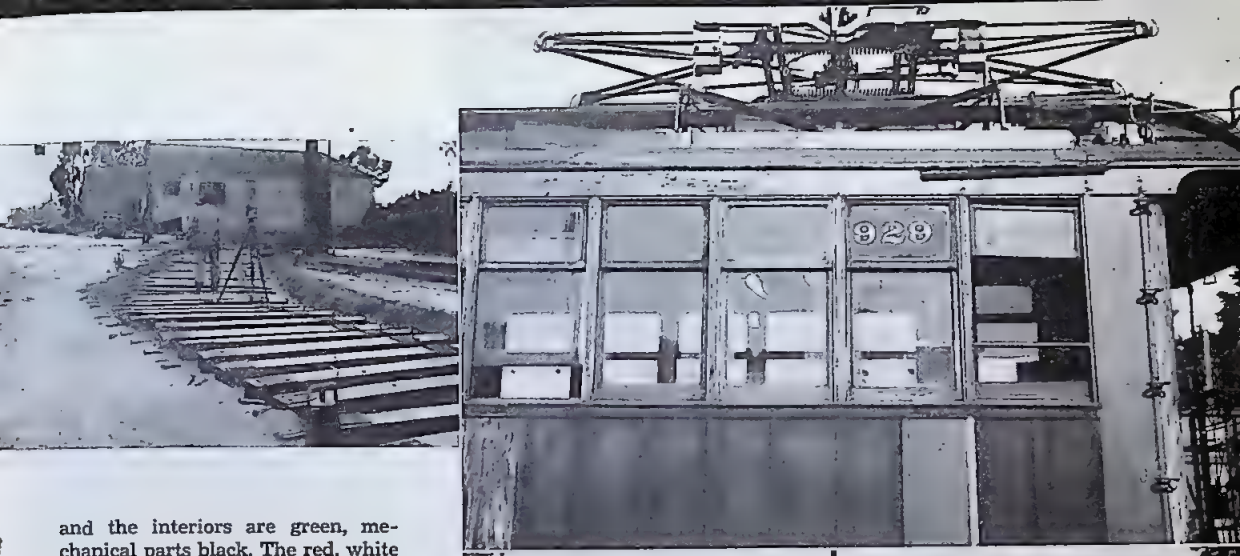
Here the Maritime Commission stepped in, building a brand-new electric railroad, known as the Shipyard Railway, from the Oakland-San Francisco bridgehead to the Richmond shipyards. All the Key Route lines of the Eastbay area converge at the bridgehead, so this terminus provided convenient transfer lines from all sections of the Eastbay, as well as from San Francisco.

Materials are scarce, and even for so important a war job as this the engineers managed to get along with almost no new equipment of any kind. Old cars were purchased from the New York Elevated (Second Avenue Line), reconditioned, coupled semi-permanently in pairs, each provided with pantographs from old Interurban Electric cars

(many IER cars are now in Los Angeles with pole trolleys, helping out in the war rush there), and with pilots, some of wood and others patterned after those on IER cars. The trolley wire came from the Bay Bridge, where it is no longer needed. Key Route cars use third rail on this portion of the route, and the trolley wire dates from IER bridge operation when the two systems were used to separate the two voltages used by the two railroads. Switches and crossings from abandoned lines were found in nearby streetcar yards.

Of course the el cars had no steps, and rather than build steps high platforms were built at the two ends of the line and the old New York cars are used only for nonstop express service over the seven miles between terminals. Ordinary Key cars like those at bottom of page 37 provide the local service. The dingy old el cars were covered with battleship gray, a new note in electric car coloring,

lt center, Fred Fellow Jr., 1282 Carlotta Ave., Berkeley, Calif.



and the interiors are green, mechanical parts black. The red, white and blue Maritime Commission emblem on each side adds a touch of brightness.

Cars are owned by the government but started operation January 18 under Key System management. Pictures on page 35 show student trains practicing operation.

On the facing page are views of the high platform (track not yet laid) and some special trackwork at the bridgehead terminal of the shipyard line, of an old Interurban Electric train in the modern San Francisco suburban terminal of the transbay lines, and of old el cars before repainting (also above).

Center photo on this page is of the oldest Key System car, purchased from Lehigh Valley Transit (Pennsylvania). The surveyors are working on a short section of single track in the new line, most of which is double track. Modern Key trains, bottom, are made up of two-car, three-truck articulated units.

Right center, Fred Fellow Jr.; bottom, contributor unknow

W. C. Whittaker, Army and Navy Branch Y. M. C. A., 166 Embarcadero, San Francisco, Calif.

On the Santa Cruz line.

Years ago a little narrow-gauge railroad, called South Pacific Coast, started at a pier on Alameda Island, across the bay from San Francisco, worked its way down the eastern side of the bay past Santa Clara, then wound up over the mountains to Santa Cruz on the coast. Later this was all acquired by the Southern Pacific and made standard gauge. Two years ago the line was abandoned, and where this double-header was snapped pulling a passenger train to the summit tunnels in 1937 there is now a superhighway instead of a railroad. This scene on the eastern slope of the hills is quite in contrast to the foliage on the western slope, where ocean fogs have built up dense forests of redwoods and deep green grasses.

New shipping and circulation departments at 1027 N. 7th St., Milwaukee.

During the December just past, the mailing room and business office of the Kalmbach Publishing Co. handled 4265 individual orders for books and magazine [TRAINS and MODEL RAILROADER] subscriptions, more than *double* the highest previous record month, more than four times a typical month! This was 194 orders per normal working day, an order every 2½ minutes, and yet we did it with *less* help than ever before, because of the draft and the impossibility of securing seasonal employees during wartime.

That was *some* going, and we're proud of it. Even more so because into the middle of this busy season was thrown the unexpected and cataclysmic obstacle of moving [because the government took over our building]. Electricians, plumbers, carpenters, machinery erectors swarmed over the place taking it apart, and movers took out skid after skid of stock almost from under the mailing clerks' noses. Yet the whole thing was so handled that most orders were filled on our usual same-day schedule, a few up to three days late, and a couple of dozen delayed later because, beyond our control, stocks of railroad books at other publishers' warehouses were depleted by the unusual demand.

How did we do it? Plenty of overtime, of course. I don't know when the girls did their Christmas shopping. There were none of the usual Saturdays off and we worked evenings too. But part of it was system, the right system with no red tape. Henry Kirtland, our business manager, anticipated this unusual rush months ago and last Summer visited other publishers, studying their order-handling routine. He combined the best ideas into a system of our own which practically cuts the paper work of filling orders in half.

Some complaints were inevitable. A few were our fault, of course. But more than 95 per cent were because the customer, quite pardonably, failed to consider the time taken by mail under wartime conditions. Grounded air mail and missed train connections are taking their toll regularly now, and the Christmas rush started much earlier. Letters to us were three days out of Chicago, a week out of New York, a week and a half from the West Coast. We can only guess how much longer the packages took getting back—except for the little lady from New York whose order, postmarked December 15, came in the December 23 afternoon mail. A sympathetic mail clerk ferreted it out. The dollar book was to be hubby's Christmas gift. We took upon ourselves the special delivery fee and hope the book was there some time on the 25th!

When it was evident that the order had crossed the complaint in the mail, we didn't answer because it seemed unnecessary and would have held up service on other orders. We hope our customers realized this and pardoned the seeming oversight after the package was delivered.

Thank you, all of you who helped us pile up this record. Thank you especially, those few of you who had to wait. We are trying, both in our magazines and our book department, to give the best value possible for the money, and if, in this wartime, we run into some tough problems, we are at least finding solutions which will help us give still better value in the peace to come.

A. C. Kalmbach

KALMBACH PUBLISHING CO.

The Old Mullet Road

★ Owned by State of North Carolina, the A&EC was political football till leased to private interests.

By Frank P. Donovan Jr.

STATE-OWNED railroads are few and far between in the United States, and even the scant number still in existence are, in nearly every case, under long-term leases to privately operated trunk lines. In short, they have lost their individual identity in this modern age of consolidation and unification. But there are exceptions, and one of these is the Tar Heel's Atlantic & East Carolina Railway, locally known as "The Old Mullet Road."

Built as a link in North Carolina's plan for an important east-and-west trunk line, the carrier was, from its inception, primarily engaged in hauling fish, particularly mullet, to points along its route. Now, of course, the 94-mile road extending from Goldsboro to Morehead City hauls many other products besides those of the sea. Indeed, the management has recently seen fit to call it "The Tobacco Belt Route," for Lady Nicotine has long since outranked sea food in importance. Yet to old-timers its piscatorial name sticks. Tradition and sentiment are not to be taken lightly—at least not in North Carolina.

In telling the story of the Old Mullet Road we can very conveniently sidestep the private-versus-public-ownership controversy, because the Atlantic & East Carolina is a mixture of both private and state management—a curious railroad hybrid. This anomaly is explained by the fact that 70 per cent of the road's stock is owned by North Carolina, which is virtually state ownership and not a little state control. On the other hand, the day-to-day management rests almost entirely in private hands. This likewise can be accounted for by the timely appearance of one H. P. Edwards and his associates, who, in August, 1939, leased the property from the state. Mr. Edwards, in the capacity of president-general manager, has been running it—and running it well—ever since.

Although the Atlantic & East Carolina may be classed as a short line, it is no jerkwater affair. A company having 173 employees and owning 13 locomotives—mostly Ten-Wheelers and a few six-wheel switchers—10 passenger cars, some 38 freight cars and five cabooses, is far from being a Tom Thumb railroad, nor can its operations be called "Toonerville railroading." True, its single passenger train is an informal know-thy-neighbor local, but the handling of freight is a hard-headed business proposition. Since the road hauls considerable produce and fish in refrigerator cars, this perishable cargo must be dispatched with the least possible delay.

"We have an ideal freight line," a brakeman told me as he lighted his pipe and sat on the adjacent seat of the passenger train, "practically no grades—the steepest is one-half of one per cent—and very few curves. On the other side of New Bern there's a 27-mile section as straight as the crow flies. And, brother, we really wheel 'em, 'specially during the tobacco and potato seasons."

"What was your longest train?" I asked.

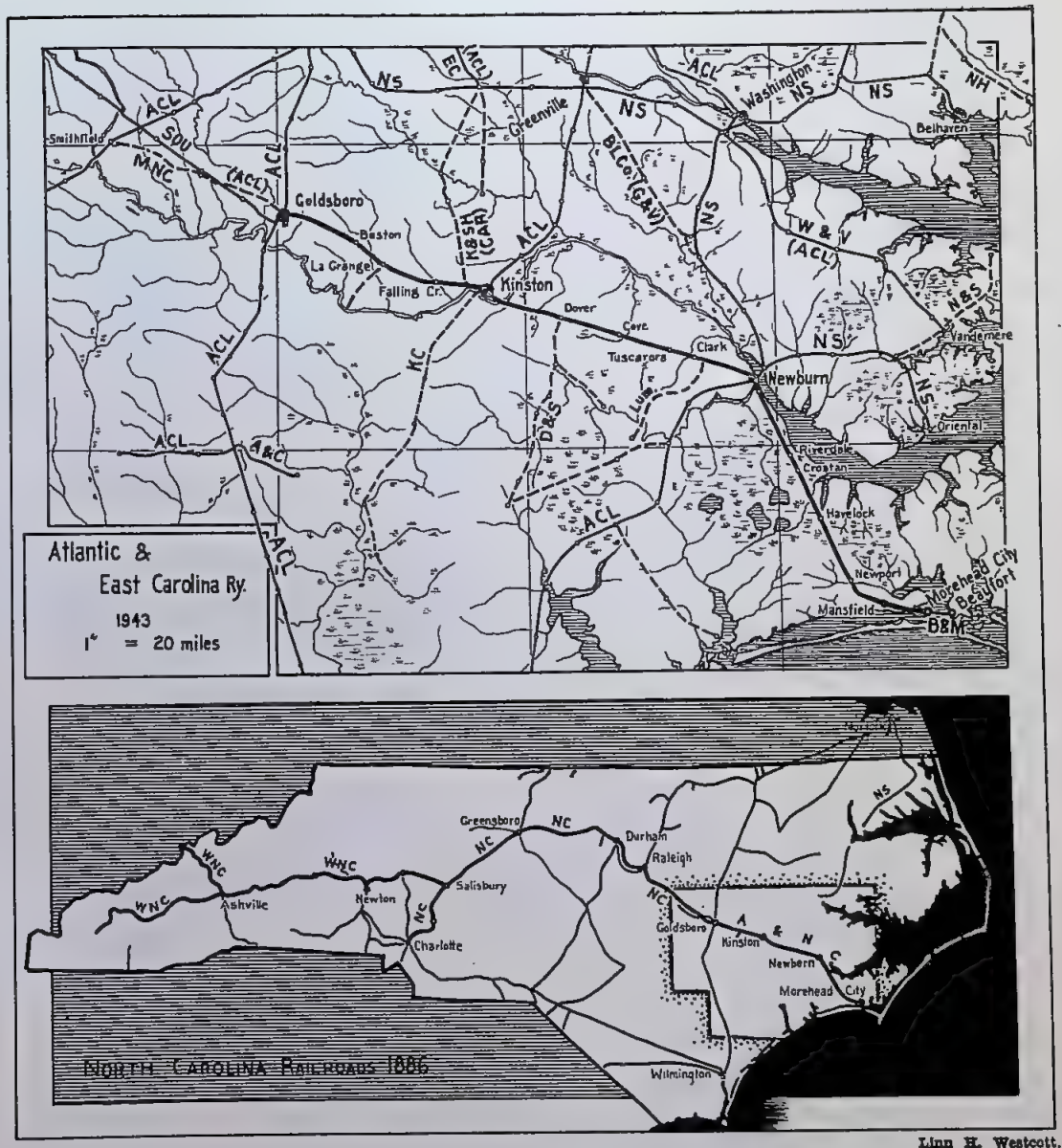
"Ninety cars," he answered. "Yes, sir! Ninety cars during the tobacco rush some years ago."

"And passengers—I suppose they have just about disappeared?"

"Well," he replied apologetically, "Nos. 2 and 5, our daily-except-Sunday mixed trains, have mostly short-haul riders and not many of them. But come around during the midsummer months and ride our *all*-passenger train on Sundays. I've counted as high as 500 people on that run. You see, we have a

It used to be a fish.

Changing traffic brought a change in herald and slogan to the A&EC, but the old nickname sticks.



Linn H. Westcott.

special round trip excursion rate to the seashore at Morehead City: only $1 from Goldsboro, and proportionate reductions from way stations. Even so, it's the freight that keeps us going."

Today the Atlantic & East Carolina still hauls large quantities of fish direct from the boats at Morehead City, but freight traffic is by no means limited to that commodity. Tobacco, cabbage, watermelons, fertilizer, merchandise, coal, and lumber are important items moved by rail. Indeed, most of the

From Goldsboro to Morehead City.

The Atlantic & East Carolina Railway extends for 94 miles from Morehead City to Goldsboro, but for all practical purposes the line is 3.17 miles longer to connect Morehead City with Beaufort, to the east. The additional 3.17 miles is actually another railroad, the Beaufort & Morehead, but the B&M's trains are made up of A&EC equipment and the only difference is in the train crews. There is a six- to 10-minute layover at Morehead City while the crews change. At Goldsboro connection is made with Atlantic Coast Line and Southern. At Havelock there is a two-mile branch to Cherry Point which is used only for freight service in switching movements.

Next month:

Once again the great arched ceiling over the main concourse of Grand Central Terminal echoes with the muffled noise of 40-million-a-year passenger traffic—sweet music to the ears of railroad veterans and a swell story for the March TRAINS. Don't miss "Grand Central Terminal," by A. C. Kalmbach.

line runs through profitable tobacco and potato country. Lumbering, on the contrary, has declined, and many of the timber areas have been worked out. Just west of New Bern is a station called Mills Junction, a mute reminder of the days when a logging road served as a feeder for the A&EC.

The sole passenger train on the Old Mullet Road puffs out of Goldsboro Union Station on weekdays at 6:30 a.m. for its leisurely trip to Morehead City. It is pulled by a Baldwin Ten-Wheeler coupled to four cars: mail, express, passenger, and finally a dull red box car bearing the curious insignia of a flying fish—the former symbol of the A&EC. For the half-mile to Goldsboro Yard it uses the tracks of the Southern; then the train proceeds along its own right of way to Morehead City, arriving at 11:19 a.m. Returning, it leaves at 3:45 p.m. and pulls into Goldsboro at 8:37 p.m.

On the employees' timetable this train is classed as mixed, but it does little shunting until arriving at New Bern. The day the author took the varnish he was told they would "hook on a couple o' cars" at New Bern. When the conductor gave the highball, 16 reefers were tagging on behind for Morehead City.

The country served is typical of East Carolina—swamps, tobacco fields, villages, thickets, and marshes. But the passenger will find a decided contrast when he arrives at the coast, for friendly beaches and salty ocean breezes take the place of swamps and dampness. Too, the Croatan National Forest, lying between New Bern and the coast, is an interesting locale abounding in quail, wild turkey, duck, geese, and deer. It is said to be the favorite hunting grounds of Babe Ruth.

The chief towns served by the A&EC are Goldsboro, Kinston, New Bern, and Morehead City, from which points most of the railroad's freight originates. The company headquarters and shops are located at New Bern, a community of over 12,000 inhabitants, which is also served by the Atlantic Coast Line and Norfolk Southern railroads, although the Mullet Line is the only one providing passenger service.

A very important feeder to the A&EC is the Beaufort & Morehead Railroad, which may be called a *short short* line. According to the Association of American Railroads' *Quiz on Railroads and Railroading,* it is the shortest line in the United States performing freight, passenger, express, and mail service. Connecting the two towns from which it is named, this 3.17-mile carrier has nearly half its trackage on bridges. It was built in 1904-1905 by the Norfolk Southern, but operates as an independent unit. Since the Beaufort & Morehead has no rolling stock, it uses the Mullet Road's equipment and the two companies work in close cooperation with each other. The Atlantic & East Carolina's passenger and freight trains are usually highballed through to Beaufort with no other formality than the changing of crews.

There used to be other small roads operated as feeders to the Mullet Line and managed by Norfolk Southern interests at the time when the latter company leased the state-owned railroad. But time has not dealt lightly with Dixie's short lines, for, as one Carolinian put it, "They have nearly all gone with the wind." Roads such as the Carolina, the Dover & South Bound, and the Kinston-Carolina, connecting with the A&EC at Hines Junction, Dover, and Kinston, respectively, are now only a memory.

Be that as it may, the Old Mullet Road is probably in better shape, physically and financially, than it has been in many a year. Moreover, everyone along the route has faith in Mr. Edwards. They know him as a practical railroader, one who has put the Atlantic & Western, another Tar Heel short line, on its feet, and one who they feel confident will do the same with the Atlantic & East Carolina. Of course, it is too short a time to make a comprehensive analysis of the company under the new regime except to say there has been a marked upturn in its revenues.

"This here Edwards," a small shipper told me, "is a go-getter. Since he's been running the line they really go after freight and nine times out of ten they get it. There's no flies on the Old Mullet Road any more."

To sketch the history of the Atlantic & East Carolina is a big order and we must perforce condense and cut until a mere skeleton is left. We may, however, liken it to a problem child, for the railway has been more or less a problem to its owners, operators, and North Carolinians in general. As in the case of a problem child, too, one must not study only its history, *per se,* but also its relationship to its railroad brethren. In truth, the A&EC is just one of three children all having checkered careers and yet all ultimately becoming useful and worthy citizens.

The Atlantic & *North* Carolina *Railroad* (as the Atlantic & *East* Carolina *Railway* was called prior to 1939) was organized in New Bern on July 20, 1854. At the beginning it was part of a giant scheme to give the Tar Heel State an east-and-west trunk line from Beaufort Harbor (now Morehead City) to Tennessee. This was highly desirable because North Carolina products usually found their way to the harbors of Norfolk or Charleston—in fact, almost anywhere but to home state ports. Naturally, the enrichment

At Morehead City.

These two views of the Morehead City passenger facilities bring out the interesting fact that the station is across the street from the tracks, as is the semaphore signal. In the top photo No. 102 waits with Train 5, mixed service.

Robert McKell, 187 W. 2nd St., Chillicothe, O.

of South Carolina and Virginia at the expense of North Carolina did not appeal to loyal Tar Heelers. But the A&NC was only one-third of the lofty project to keep freight within the state. To be exact, it was considerably less than 33⅓ per cent of the total enterprise, for both the North Carolina and the Western North Carolina railroads exceeded it in mileage. The former line, when eventually completed, extended from Goldsboro to Charlotte in the form of a crescent. The latter road started at Salisbury and petered out west of Morgantown; it never reached Tennessee under state ownership. (In passing it is interesting to know the Southern now operates the North Carolina Railroad under a long-term lease and the Western North Carolina by outright purchase.) These two roads were connected with each other and for a time operated under virtually the same management. Likewise, all three were state-built and intermittently state-operated.

But to return to the Old Mullet Road, a glance at the map will show why it was a very important part of the whole state enterprise. Morehead City, the eastern terminus of the line, was regarded as the best port in North Carolina. Indeed, it was likened to New York City, with a land-locked harbor and certain geographical features akin to that metropolis. Folks even predicted it would become another Empire City, and certainly one of the great Southern ports on the eastern seaboard.

From a portrait by William Gard Broune.

Morehead.

Gov. John Motley Morehead was an important figure in the building of the Atlantic & North Carolina, predecessor of the A&EC. The painting shows Morehead holding the charter of the North Carolina Railroad in his right hand. Now leased to the Southern, this state-owned road was an important feeder to the A&NC.

Morehead City was named after John Motley Morehead, lawyer, statesman, financier, and "railroad prince" of North Carolina. From all accounts he was a man like the late governor of California, William Gibbs McAdoo: a versatile chap with many irons in the fire and the uncanny ability to keep all of them hot. Besides promoting the Atlantic & North Carolina he was president of the North Carolina Railroad and a strong factor in building its sister road, the Western North Carolina. Other chores which occupied his time were supervising cotton mills and mercantile houses, to say nothing of holding down the office of governor of North Carolina. A many-sided man, the Hon. John M. Morehead.

Almost as important as having ability is the faculty of picking men with ability. The story is told of how Gov. Morehead with great gravity advised the daughter of a staunch Whig, "Never marry a Democrat on any consideration whatever"—and added with a merry twinkle of his eye "unless he is a very clever fellow indeed, in which case, my dear, never let him pass." Morehead, dyed-in-the-wool Whig that he was, always sought men of ability regardless of their political, social, or religious views. And therein lies the secret of the success of his achievements.

It was partially because Gov. Morehead owned land in the community which bears his name and also because of a genuine desire to see North Carolina have an adequate port that he fostered the development of Morehead City. At any rate, the "city" (pop. 3483, 1930 census) now has modern harbor facilities, but alas, the traffic its builder prophesied never became a reality. The reason: an overstatement of the inherent natural advantages of the port coupled with the erratic management of the Atlantic & North Carolina and its two connecting roads.

Hardly had the Mullet Road been completed when the Civil War came and with it an arbitrary change of management from state to federal control. Incidentally, the

B&M and A&EC trains.

At top is the afternoon westbound Beaufort & Morehead train crossing Beaufort Inlet. When it reaches Morehead City it will become the afternoon westbound Atlantic & East Carolina train. At Morehead City it will pick up freight cars and proceed down the street as in the second photo, showing Train 5 after leaving the station. At right is car No. 962 of the Tobacco Belt Route.

Robert M

company built, in its own shops at New Bern, what is said to be the first offensive weapon employed on a railroad: an iron-clad flat car provided with a cannon and loopholes for riflemen. Although the condition of the railroad was none too good before the conflict, it was in wretched shape after the "domn-yankees" stepped out of control. On top of this, every time a new governor took office the management was subject to change. In more instances than not this called for a merry round of lawsuits, injunctions, and receiverships.

By 1879 the physical condition of the railroad was greatly improved, but President John Hughes bemoaned the paucity of traffic to and from Morehead City. Said he:

"Here we have a good road handsomely equipped and ready for business, being the shortest outlet, by many miles, to the sea . . . with a harbor spacious enough to hold in its ample bosom the navies of the civilized world . . . and yet . . . left almost as devoid of commerce as the top of the Blue Ridge. For all practical uses, we might almost as well have 'a painted ship upon a painted ocean.'"

Perhaps railroader Hughes was endowed with a vivid imagination, like Samuel Taylor Coleridge, whose lines he quoted, if he visualized Morehead City becoming another Norfolk or Charleston. Unfortunately, he was destined to be disappointed. Morehead City, however, is still a delightful seashore community but as a port it handles only a moderate amount of traffic.

Another telling blow to the Atlantic & North Carolina, even more distressing than

the harbor limitations, was the failure of all efforts to consolidate the three state-controlled railroads. The trunk-line project as a single unified road was doomed; the Old Mullet line was ever to remain more or less a local carrier. Yet as late as 1881 an enterprise styled as the Midland North Carolina Railway Company leased the A&NC with the express purpose of building its own road from Goldsboro to the Tennessee line. The Midland outfit built a 22-mile extension to Smithfield, whereupon the project fell through. The Atlantic & North Carolina reverted to its owners and the Goldsboro-Smithfield section was operated by the Atlantic Coast Line. In 1931 the Coast Line abandoned this ill-fated extension and the possibility of a western division was sealed for all time.

So the Old Mullet Road limped along, breaking even one year, going into the red the next. [For readers interested in its subsequent history there is available Cecil K. Brown's excellent study called *A State Movement in Railroad Development,* from which much of this material is taken.] Eventually, the road was leased to the Norfolk & Southern (now the Norfolk Southern) for a term of 91 years, starting on September 2, 1904.

In 1934 the lease was forfeited because of non-payment of rent, and once again the carrier became both state-owned and state-operated. This interregnum of public operation lasted for about four years, when the governor and the people felt that the railroad should be managed by a *railroad man.* North Carolina learned the hard way that a steady, moderate income is much preferred to the uncertainties of political control. With the coming of the Edwards regime in 1939 practically everyone agreed that a railroader is good for many years, whereas a politician, no matter how able he may be, can only operate a road as long as his party is in power. A Kinston storekeeper summed up his reaction to the private-operation-under-public-ownership of the Old Mullet Road when he said: "It's like having the cake and the penny, too."

Yes, the cake of efficient, business-like operation and the penny of $60,500 a year in revenue from the lease—which goes to the taxpayers through the public ownership feature. Truly a satisfying answer to a perplexing North Carolina problem.

Locomotives of Old Mullet Road.

No. 3 of the A&EC motive power roster, shown below, is leased to the Beaufort & Morehead and is used on the 3.17-mile run between the two cities. No. 3 is an 0-6-0 built by Baldwin. Notice the old herald on the side of the tender, complete with flying fish and the slogan "The Old Mullet Road." The A&EC owns a total of 12 steam locomotives and one Plymouth Diesel, 10 passenger cars, 38 freight cars and five cabooses. Half of the steam locomotives are Ten-Wheelers; a third are 0-6-0 switchers. The entire roster is shown at right.

Loco No.	Type	Builder	Tractive Power, Pounds
3	0-6-0	Baldwin	20,045
4	0-6-0	American	23,794
5	0-6-0	Baldwin	23,794
6	0-6-0	"	23,794
101	4-6-0	"	25,550
102	4-6-0	"	25,550
103	4-6-0	"	25,550
601	4-6-0	"	35,900
602	4-6-0	"	35,900
11	2-6-0	Montreal	28,720
12	4-6-0	Baldwin	23,400
17	4-4-0	"	18,900
7	0-4-0	Plymouth Diesel	20,000

Robert McKell.

SOLDIERS ON THE WINTER FRONT

A million veterans on the home front are in action in the war against winter.

It's a war being fought by railroad men to keep the greatest traffic load in history rolling every minute of the day and night.

It means miles of snowsheds built through the mountains.

It means miles of detector fences to warn of snowslides.

It means mighty locomotives puffing behind great rotaries, or shoving steel-winged plows to fling drifts aside.

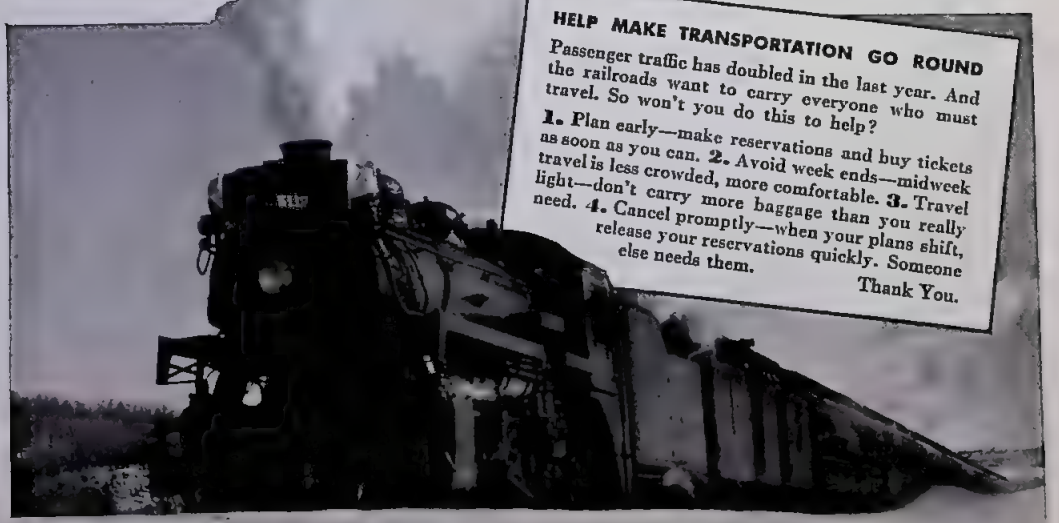
It means men braving the blizzard's bite to keep clear the thousands of switches – repair crews standing ready to meet the threat of flood-swollen streams.

All this is an old story to railroad men – but it's a story that takes on new drama today.

For America depends on its railroads as never before, to keep its war factories humming, its armies fed and equipped around the world – at the same time that 130 million Americans at home are supplied with the food and fuel they must have.

Railroad men know the size of the job that rests on their shoulders. It's a job twice as big as it was before the world went to war.

And they'll give it the best they've got, so long as they have an engine that will pull, a car that will roll, and a track to follow.



HELP MAKE TRANSPORTATION GO ROUND

Passenger traffic has doubled in the last year. And the railroads want to carry everyone who must travel. So won't you do this to help?

1. Plan early—make reservations and buy tickets as soon as you can. **2.** Avoid week ends—midweek travel is less crowded, more comfortable. **3.** Travel light—don't carry more baggage than you really need. **4.** Cancel promptly—when your plans shift, release your reservations quickly. Someone else needs them.

Thank You.

Association of AMERICAN RAILROADS *Washington D.C.*

UNITED FOR VICTORY

Letters

★ Interesting sidelights on railroads as readers observe them.

Notes From the Little Red Book.

THE Boston & Maine is painting all its passenger equipment red, similar to that of the Pennsylvania. The Maine Central is doing the same.

The B&M has purchased some of the older suburban steel coaches of the Pennsylvania. The usual equipment in B&M suburban service is, unlike other roads, of wooden construction. The B&M is the only road in the United States, to my knowledge, which uses wooden equipment in passenger service (except for the Grand Trunk, controlled by Canadian National). I believe the Canadian Pacific may use a few wooden cars around Montreal. [Most U. S. roads use a few wooden cars.—*Ed.*]

The B&M has retained a great many small Atlantic type locomotives for suburban service north and east of Boston.

The New Haven has purchased some Erie suburban coaches. *F. A. Southwayd.*

75 Clinton Rd., West Caldwell, N. J.

Be Kind to Servicemen!

IT IS of the utmost importance that railway employees, especially train and ticket men, be kind and courteous in their treatment of men of the armed forces. They are the future customers of the railroads, the bread and butter of the railroad man, and it is their treatment now that may determine which transportation facility they will use later, after the war. *Hart I. Seely Jr.*

430 Pennsylvania Ave., Waverly, N. Y.

[Not being in the service ourselves, we are in no position to state definitely just what kind of treatment servicemen have been accorded by railroad employees, but our impression gained from conversations with soldiers is that the average railroad employee is, if anything, more courteous to Uncle Sam's fighters than to civilian passengers. But, of course, you may find a grouch here and there in these times of stress.—*Ed.*]

Changes on the ET&WNC.

ON A recent furlough home I "detoured" via the Smoky Mountain Railway, the East Tennessee & Western North Carolina Railroad, Clinchfield, and C&O branches. On arrival home I found the December TRAINS with the article on the ET&WNC.

There have been some surprising changes on the ET&WNC in the past year or so. First, on August 10 passenger service was restored and three round trips a day have been made since. At first the service was only between Port Rayon (formerly Bemberg) and Shell Creek, 19½ miles. This is a commuter service for employees of the huge rayon plants at Port Rayon, just west of Elizabethton. On September 14 service was extended to Elk Park, N. C., 4.7 miles farther. The train consists of one of the three remaining Ten-Wheelers (10, 11, 12) and the three coaches (22, 24, 25), which are old-timers from the Boston, Revere Beach & Lynn equipped with electric lights and various types of old and modern seats.

Since no wye is located at Port Rayon, the engine backs up, as they prefer to head it downgrade on account of the steep grades and curves. A wye has been surveyed, and when this has been completed the train will also turn on the Cranberry wye a mile east of Elk Park.

The train provides a maximum of service in a manner that would tickle any railfan accustomed to big roads' regulations—a service that certainly pleases the passengers. As many as 40 or more stops are made per trip, dropping off workers at any road, or in fact any point they want—and since half the service is after nightfall it calls for a thorough knowledge of some very

Back in service.

The lone passenger train of the ET&WNC lays over at Elk Park, N. C., between runs.

dark spots in the gorges and deep valleys of Tennessee's eastern mountains. The brakeman signals with his fingers to indicate where certain passengers want off and uses a number of such entirely ET&WNC signals. They haul from 60 to 150 persons per trip.

Over a year ago the road had five 4-6-0's and had just overhauled Nos. 10 and 14. The government requisitioned them all of a sudden and apparently they are in Alaska. Before that the road had scrapped No. 7, whose picture you also printed. This engine was the largest narrow-gauge switcher ever used in the United States. Once more the ET&WNC had to get standard-gauge power [for use on the mixed-gauge section from Elizabethton to Johnson City], as the rayon business is large, so now it has three: No. 204, a Lima-built 2-8-0, secondhand from some Southern road; No. 205, an 0-6-0 from the Clinchfield; and No. 206, a former Illinois Central 2-6-0. Two of these are usually in service. The narrow-gauge engines no longer do the rayon switching or any Johnson City switching, and consequently much of the third rail is gone. Usually a daily-except-Sunday freight runs to Cranberry and does local switching.

Most business is out of Cranberry, where pulpwood is loaded. The iron mines your article mentions are dead, their shafts full of debris and the machinery and buildings scrapped. They've been gone from revenue for nearly 15 years. Of the former Linville River Railway extension built in 1916-18 there remains only a quarter mile of steep track leading off the switchback into Cranberry. This small segment is used as a pulp loading spur.

Many freight cars have been scrapped. I found, in the engine house, the vestibuled R. P. O.-express-coach combine No. 15 and open-air observation car 11 (formerly used on the frequent Sunday excursions), both freshly painted. In the car shed No. 18 rested in obscurity. It was one of the only two all-steel narrow-gauge R. P. O.-express cars to be used on U. S. narrow gauge. Linville River Railway coach No. 4 completed the passenger equipment roster.

Cpl. Robert W. Richardson.
Hqrs. Co., 95 Signal Bn., Camp Forrest, Tenn.

Cpl. Robert W. Richardson.

The Month

★ Call for steel rail is major factor in '42 abandonments.

★ The tearing up of the 142-mile line in Utah from Lucin to Ogden by the Southern Pacific led the list of long railroad abandonments in 1942. Next largest was between David City and Hastings, 102.62 miles, in Nebraska, by the Chicago & North Western. Then followed the St. Louis-San Francisco with 91.16 miles of track taken out between McNair, Ark., and Dill, Okla. Fourth on the list is probably the most outstanding in that it involved the abandonment of a complete railroad, the Pacific Coast Railway in California. All tracks were taken up on the PC between Los Alamos and Port San Luis and between Suey Junction and Sisquoc. Of the 2516 miles of line (next highest figure for any one year was 1995 miles abandoned in 1934) there remains only 369 miles of track to be taken up. Most of the steel recovered in 1942 has been turned back to steel mills or to the armed forces.

★ Col. Robert H. Henry, assistant to the president, Association of American Railroads, will speak on "Our Railroads in the Civil War and World War No. 1" and Col. E. C. R. Lasher, Army Transportation Corps, will speak on "What the Railroads are Accomplishing in the Present War" at the meeting of the Railroadians of America to be held February 11, at 7:30 p.m., in the auditorium of the Pennsylvania Railroad Y.M.C.A., Pennsylvania Station, fourth floor, Eighth Avenue side, New York. The public is invited.

★ The Pere Marquette Railway car ferries are in the U.S. Coast Guard service. Six ships, including the streamlined *City of Midland*, are being used to train sailors of the Coast Guard. The first class to get its "sea legs" aboard the ferries consists of 100 men. They stand the same watch as do the regular crews, four hours on and eight hours off. Lake Michigan is not infested with enemy submarines or torpedo planes, but within its area are encountered all of the risks, dangers and hardships experienced on the wider seas. To maintain proper discipline and facilitate training, the carferry captains and chief engineers have been commissioned lieutenant commanders, and first officers and first assistant engineers were commissioned lieutenants in the Coast Guard.

★ Before World War I railway builders were rapidly extending the Canadian railway westward. New stations sprang up overnight along the line and the timetable man was kept busy thinking up new names. There is one stretch where he was hard put to think them up fast enough and resorted to a system. He alphabetized a string of stations west of Portage la Prairie, Manitoba. Today the *Continental Limited* of the CN rolls by, in order: Arona, Bloom, Caye, Deer, Exira, Firdale, Gregg, Harte, Ingelow, and Justice. The next station breaks the continuity, but beyond Rivers the list continues with Myra, Norman, Oakner, Pope, and Quadra.

★ The Southern Railway System's historic collection of railway signals, rails and other relics of the evolution of American railroads, said to be the only collection of its kind on exhibit in the country, has been contributed to the nation's scrap pile. These antiques, which included signals dating back almost one hundred years, had been on display in Museum Park, opposite the Southern Railway passenger station at Lexington, Ky., and in a room in the depot, since 1926.

Marshall Brock, signal supervisor of the Southern, who directed the dismantling of the museum, naturally hated to see the irreplaceable relics go the way of all good metal scrap. But he reasoned that "if Hitler came over here he would take them and we would rather use them to keep him from getting here."

"Materially," he explained, "the museum contains about 30 tons of metal, but historically and sentimentally it was worth a million dollars. It was the only collection of its kind in the United States and at one time the Smithsonian Institute sought permission to move it to Washington. But patriotism is more important today than sentiment."

Army demolishes bridge.

The abandoned Bridge No. 72 of the Louisville & Nashville Railroad, which crossed the Kentucky River at Irvine, Ky., was demolished late in 1942 by a battalion of the 387th Engineers from Fort Knox, Ky., thus giving the army valuable field practice as well as tons of scrap.

Robert L. Kirkpatrick, courtesy *L&N Employees' Magazine*.

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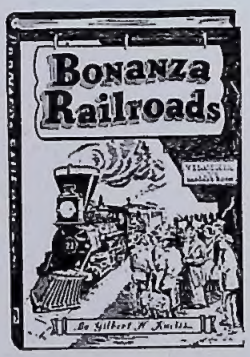

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